DOCUMENT RESUME

ED 024 869 AC 002 912

By-Hunter, Woodrow W.
A Longitudinal Study of Preretirement Education.
Michigan Univ., Ann Arbor. Div. of Gerontology.
Spons Agency-Welfare Administration, Washington, D.C. (DHEW).
Report No-Proj-151
Pub Date 68
Note-128p.
EDRS Price MF-$0.75 HC-$6.50
Descriptors-*Adjustment Problems, *Adult Education Programs, Bibliographies, Changing Attitudes, Decision Making, Family Relationship, *Group Discussion, Health, Laborers, Leisure Time, Money Management, *Research, *Retirement, Social Relations, Work Attitudes
Identifiers-*Detroit

In a longitudinal study of preretirement education, one of two groups had a group discussion program for 10 weekly sessions. Volunteer participants were male, hourly-rated workers, 60-68 years old, employed in the Detroit area automobile assembly plants. Discussion centered on work and retirement, money management, physical and mental health, living arrangements, relationships with family and friends, legal issues, free time, and community programs. Data were collected by interviews with all subjects before retirement, six to 12 months, and 18 to 24 months after retirement. Results showed that the preretirement education significantly reduced retirement dissatisfaction and health worries, and encouraged participation in activities with family and friends. With both experimental and control groups, there was an increase in the husbands' power in family decision making after retirement. Certain tentative findings, such as the suggestion that the program was more effective with well educated whites, indicate that further study is needed. (jf)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

A LONGITUDINAL STUDY of PRERETIREMENT EDUCATION

Department of Health, Education, and Welfare
Welfare Administration
Research Grants Branch
Project #151

Woodrow W. Hunter

DIVISION OF GERONTOLOGY
THE UNIVERSITY OF MICHIGAN
1968

ED024869

AC002912

A Longitudinal Study
of
Preretirement Education

Department of Health, Education, and Welfare
Welfare Administration
Research Grants Branch
Project #151

Woodrow W. Hunter

Division of Gerontology
The University of Michigan
1968

The study reported herein was supported by a grant from the Research Grants Branch, Division of Research, Welfare Administration, Department of Health, Education, and Welfare, Washington, D.C.

Acknowledgements

The author owes a great deal to many individuals and organizations including the Research Grants Branch, Division of Research, Welfare Administration, Department of Health, Education, and Welfare for making available under grant number 151 the major share of support for the study, and the Division of Gerontology and the Institute of Labor and Industrial Relations of the University of Michigan for providing the additional funds that were needed to conduct the study. Of equal importance was the financial assistance provided by the Cooperative Research Branch of the United States Office of Education for the preliminary development and assessment of preretirement education materials upon which this study was based.

The United Automobile Workers International Union and several of its local unions in the Metropolitan Detroit area deserve special credit for identifying subjects and encouraging their participation in preretirement education programs in local union halls.

Sushil Kumar and Peter Kunsman, graduate students working on advanced degrees at the University of Michigan deserve special credit for their capable assistance in the various aspects of the research. Miss Esther Schaeffer of the University of Michigan's Statistical Research Laboratory gave considerable help as a statistical consultant to the project. Judith Floyd gave excellent help as a statistical assistant.

The author also wishes especially to thank Mr. Al Rightley, coordinator, Older and Retired Workers Department, UAW International Union, without whose help local union cooperation would not have been what it was. In addition, Mr. Rightley found time to serve as co-leader with the author at each of the preretirement education sessions. His capable handling of all aspects of program planning and organization was indispensable.

The author was fortunate indeed to have an assistant as capable and dependable as Mrs. Lois Spaide who was directly responsible for the many administrative, clerical and secretarial aspects of the project. She, together with her co-workers Sue Miller and Karen Baxter, never failed to give of themselves beyond the call of duty in order to see the job finished, whatever it might be.

In the last analysis, however, the study would not have been undertaken without the support of Dr. Wilma Donahue, Chairman of the University of Michigan's Division of Gerontology, who invariably found time to counsel, implement and encourage.

Woodrow W. Hunter
Ann Arbor, Michigan
June, 1968

TABLE OF CONTENTS

I. The Problem

Page

The Need for Retirement Education 2
Origins and Status of Preretirement Education 3
Numbers and Characteristics of Programs 4
Surveys of Industry. 5
Preretirement Education in Labor Unions 8
Preretirement Education in European Countries 9
Preretirement Education Research 10
Frame of Reference for the Study 11

II. Purposes and Methods of the Study

Purposes of the Longitudinal Study 21
Review of a Preliminary Study 22
Subjects for the Longitudinal Study 24
Comparability of Study Groups Before Retirement 25
Comparability of Study Groups One Year After Retirement . . . 36
Summary of Statistical Comparisons of Study Groups 43
Hypotheses of the Study 45
Measures of Personal and Social Adjustment in Retirement . . . 45
Organizational Procedures 53
The Preretirement Education Program 54

III. Findings of the Study

Methods of Analysis 63
Analysis of Mean Scores 64
Analysis of Mean Change Scores 73
The Adjustment of Sub-groups 76
The Social Structure of the Family in Retirement 78
Summary of Findings 84

IV. Summary of the Study and Implications for Further Research . . 87

Appendix 1: Tables. 94

Appendix 2: Indexes 113

LIST OF TABLES

Table 1. Subjects for the Preliminary Study 24
Table 2. Old and New Subjects for the Longitudinal Study. . . 25
Table 3. Number of Subjects Available at the Various Phases of the Study 25

List of Tables (con't.) Page

Table 4. Comparison of Experimental and Control Populations on the Basis of Age (Pre-R1) 27
Table 5. Comparison of Experimental and Control Subjects on the Basis of Marital Status (Pre-R1) 27
Table 6. Experimental and Control Populations Compared on the Basis of Race (Pre-R1) 28
Table 7. Experimental and Control Subjects Compared on the Basis of Birthplace and Language Spoken at Place of Birth (Pre-R1) . 28
Table 8. Experimental and Control Subjects Compared by Educational Status (Pre-R1) 29
Table 9. Experimental and Control Subjects Compared by Length of Residence in the Community (Pre-R1) 30
Table 10. Experimental and Control Subjects Compared by Home Ownership, Problems with the Home and Plans to Move (Pre-R1) . . . 31
Table 11. Self-Rating of Health of Experimental and Control Subjects (Pre-R1) 31
Table 12. Experimental and Control Subjects Compared on the Basis of Worry About Health (Pre-R1) 32
Table 13. Experimental and Control Subjects Compared on the Basis of Recent Change in Health and Having Health Problems (Pre-R1) 32
Table 14. Experimental and Control Subjects Compared by Occupations (Pre-R1) 33
Table 15. Experimental and Control Subjects Compared by Their Attitudes Toward Their Jobs (Pre-R1) 34
Table 16. Experimental and Control Populations Compared by Total Income (Pre-R1) 34
Table 17. Study Populations Compared on the Basis of Other Income (Pre-R1) 35
Table 18. Attitudes of Study Populations Toward Present and Future Income (Pre-R1) 35
Table 19. A Summary of Statistical Comparisons of Experimental and Control Subjects One Year After Retirement (R-1) 37
Table 20. Comparison of Experimental and Control Subjects on the Basis of Age (R-2) 37
Table 21. Comparison of Experimental and Control Subjects on the Basis of Marital Status (R-2) 38
Table 22. Experimental and Control Subjects Compared on the Basis of Race (R-2) 38
Table 23. Experimental and Control Subjects Compared on the Basis of Birthplace and Language Spoken at Place of Birth (R-2). . . . 39
Table 24. Experimental and Control Subjects Compared by Educational Status (R-2) 39
Table 25. Experimental and Control Subjects Compared by Home Ownership, Problems With Home and Plans to Move (R-2) 40
Table 26. Experimental and Control Subjects Compared by Health Status (R-2) 41
Table 27. Experimental and Control Subjects Compared on the Basis of Total Retirement Income (R-2) 42
Table 28. Experimental and Control Subjects Compared by Adequacy of Retirement Income (R-2) 42

List of Table (con't.) Page

Table 29. Experimental and Control Subjects Compared by Gainful Employment, Worry Over Money and Standard of Living (R-2). 43
Table 30. A Summary of Statistical Comparisons of Study Samples 44
Table 31. Information About the Battery of Indexes Used to Measure General and Specific Aspects of Adjustment to Retirement 46
Table 32. Experimental and Control Subjects Compared on the Basis of Mean Scores on General Adjustment Measures 65
Table 33. Experimental and Control Subjects Compared on the Basis of Mean Scores on Self-Concept Measures 66
Table 34. Experimental and Control Subjects Compared on the basis of Mean Scores on Attitude Toward Retirement Measures 67
Table 35. Summary of Mean Score Differences on Eleven General Indexes . . . 68
Table 36. Experimental and Control Subjects Compared on the Basis of Mean Scores on Health Measures 69
Table 37. Experimental and Control Subjects Compared on the Basis of Mean Scores on Financial Measures. 70
Table 38. Experimental and Control Subjects Compared on the Basis of Mean Scores on Family and Friends Measures 70
Table 39. Experimental and Control Subjects Compared on the Basis of Mean Scores on a Home and Community Measure. 71
Table 40. Experimental and Control Subjects Compared on the Basis of Mean Scores on Activity Measures 72
Table 41. Tests of Significance of the Differences in Mean Change Scores on Eighteen Indexes Which Were Administered During the Year Prior to Retirement, the Year After and Two Years After Retirement 74
Table 42. Tests of Significance of the Differences in Mean Change Scores on Eighteen Indexes Which Were Only Administered During the Year After Retirement and Again Two Years After Retirement . . . 75
Table 43. A Summary of the Effects of the Preretirement Education Program on Various Sub-groups of Subjects as Measured by Mean Scores 77
Table 44. A Summary of Effects of the Preretirement Education Program on Various Sub-groups of Subjects as Measured by Mean Change Scores 78
Table 45. Husband's Mean Decision Making Power One Year and Two Years after Retirement 81
Table 46. The Division of Labor between Husbands and Wives as Measured by the Wife's Mean Task Performance Score Before Retirement, One Year and Two Years After Retirement. 83
Table 47. Comparisons of Experimental and Control Groups on the Basis of Marital Status, Home Ownership and Plans to Move (R-1) 94
Table 48. Comparisons of Experimental and Control Groups on the Basis of Health Status (R-1). 95
Table 49. Comparisons of Experimental and Control Groups on the Basis of Financial Status (R-1) 96
Table 50. Distribution of Power in Decision-Making Among Experimental and Control Families One Year After Retirement 97
Table 51. Distribution of Power in Decision-Making Among Experimental and Control Families Two Years After Retirement 98

List of Table (con't.) Page

Table 52. Division of Labor Between Husbands and Wives Prior to Retirement 99
Table 53. Division of Labor Between Husbands and Wives One Year After Retirement 100
Table 54. Division of Labor Between Husbands and Wives Two Years After Retirement 101
Table 55. Source Data From Which Z Values Were Computed on 18 Indexes (Pre-R1 to R-1) 102
Table 56. Source Data from Which Z Values were Computed on 18 Indexes (Pre-R1 to R-2) 102
Table 57. Source Data from Which Z Values were Computed on 36 Indexes Which Were Administered One Year and Two Years After Retirement 103
Table 58. A comparison of the Effects of the Preretirement Education Program on White and Negro Subjects as Measured by Mean Scores 104
Table 59. A Comparison of the Effects of the Preretirement Education Program on Subjects Born in an English Speaking Country and Subjects Born in a Non-English Speaking Country as Measured by Mean Scores 105
Table 60. A Comparison of the Effects of the Preretirement Education Program on Subjects Who Were Married and Subjects Who Were Not Married as Measured by Mean Scores 106
Table 61. A Comparison of the Effects of the Preretirement Education Program on Subjects Who Completed Eight or More Grades and Subjects Who Completed Fewer Than Eight Grades in School as Measured by Mean Scores. 107
Table 62. A Comparison of the Effects of the Preretirement Education Program on Subjects with $6,000 or More Income and Subjects with Less than $6,000 Income as Measured by Mean Scores 108
Table 63. A Comparison of the Effects of the Preretirement Education Program on Subjects Who Were Engaged in Skilled Jobs and Subjects Who Were Engaged in Unskilled Jobs as Measured by Mean Scores 109
Table 64. A Comparison of the Effects of the Preretirement Education Program on White and Negro Subjects as Measured by Mean Change Scores. 110
Table 65. A Comparison of the Effects of the Preretirement Education Program on Subjects Born in English Speaking Countries and Subjects Born in Non-English Speaking Countries as Measured by Mean Change Scores 111
Table 66. A Comparison of the Effects of the Preretirement Education Program on Subjects with $6,000 and More Income and Subjects with Less than $6,000 Income as Measured by Mean Change Scores 112

I. THE PROBLEM

In a society which places primary value upon gainful employment, major changes are taking place which make it imperative that educators accelerate efforts toward creative opportunities for adult learning. The change which is documented better than most is the enforced retirement at an ever younger age of an unprecedented number of older persons and their committment to an important class of people for whom leisure rather than work is the prevailing way of life.[1]

Presumably, this is no problem if the older individual is prepared to make wholesome use of his time in retirement. If, on the other hand, the individual does not possess the requisite knowledge and skills for replacing gainful employment with other valued activities, retirement will almost surely create problems not only for the individual but also for the community in which he lives.

More specifically, the transition from a work to a leisure way of life is almost always accompanied by reduced income.[2] Whether or not the individual successfully copes with this situation depends on many factors not the least of which are the extent to which he is fully informed about his financial situation and the extent to which he possesses skills for managing his retirement income effectively. Individual initiative, although a prerequisite in financial matters, cannot replace broader social mechanisms which society must create to reduce poverty and economic stringency in old age.

An abundance of leisure and reduced income are further aggravated by the fact that retirement in our modern industrial society brings with it a marked loss of status and the implication that once a man is no longer a productive member of society he becomes a second-rate citizen of whom very little is expected.[3] There is evidence that this implication is rejected by a growing number of older people. As a matter of fact, one of the most important developments during the past decade has been the tendency of older people to band together in organizations to reinforce their demands for the economic, social and psychological means by which individuals may make satisfactory adaptations to retirement. The social implications of this trend are clear. Our educational institutions have the opportunity to enter into a unique partnership with older people for purposes of helping them obtain information, develop skills and create acceptable retirement roles.

Still other difficulties confront the individual who is retiring from a lifetime of work. Retirement inevitably disrupts well established patterns of daily living. Opportunities for satisfying social relationships will eventually undergo change; and, with increasing age, there is almost surely to be a gradual decline in health and energy reserve.[4]

The problems of aging are most often thought of in terms of the older man who retires from work. However, the aging woman faces critical periods of adjustment when her family is raised, when her husband stops work or when, as is so often the case, she becomes widowed. When the family is raised and the last child has left home the woman is confronted in many respects with the same situation which will confront her husband somewhat later. She must relinquish her major adult role and replace it with other satisfactory activities. When the husband retires and is in the home all day instead of at work, the wife is confronted with the necessity of reorganizing long-standing habits of daily activity. Widowhood creates a new set of problems: the need to take responsibility for financial affairs, to realign social relationships, and to make different living arrangements.

The responsibility of educators for equipping older men and women for adapting to the situational changes brought about by aging and retirement is clear cut. Not so well understood is the importance of educating the individual to understand the internal physiological processes which accompany aging. Fortunately, educators now have an entirely new appraisal of the psychological and physiological processes of aging upon which to base a positive educational program about aging and retirement:

1. There is potential for personal growth throughout most of the life span.

2. It is possible to retard many of the psycho-physiological processes of aging.

3. The physical and mental changes which accompany aging occur gradually and they need not become a serious impairment until advanced old age.

4. The health sciences have extended life expectancy and they are making it possible to live the added years in relatively good health.

Some observers view retirement as a waste of human resources and a denial of basic satisfactions which come from doing useful work. Others see retirement as a valuable achievement of modern industrial society. Whatever their point of view toward retirement most observers[5,6,7,8,9] agree on one thing: older people are often poorly prepared to make wholesome, satisfying use of the superabundance of time which retirement suddenly puts at their disposal. Students of retirement also agree on the difficulties which many people have living on a reduced income, handling the changes which occur in family relationships, accepting less status, counteracting the tendency toward a restricted life space, and taking up residence eventually in a new and different environment.

The Need for Preretirement Education

Hence, there is urgent need for preretirement education designed to help older people understand the aging process, to impart knowledge and problem solving skills that will enable older people to maintain better health, foster contacts with other people, use their time meaningfully, manage their financial resources effectively, to promote good family living, encourage citizenship, encourage a positive attitude toward aging and retirement, to present a variety of solutions to practical problems of living, to encourage older people to select and try those solutions which appeal to them most, and to explore new roles for the later years. At the same time as preretirement education helps the older individual make better adjustment to aging and retirement it must share responsibility for encouraging social change by involving key leaders and by making known resources needed by older people in the community. In fact, educators could perform a disservice were they to fail to encourage opportunity in the community for older people to practice what they have learned or decided upon in preretirement education programs.

Origins and Status of Preretirement Education

Preretirement programs have been designated in various ways: preparation for retirement, preretirement counseling, preretirement education, and retirement planning. Whatever their designation they have utilized for the most part one of two approaches: the individual approach by which the employee and occasionally his spouse are invited to talk over with the employer or his representative such things as terminal pay, pension benefits or various forms of insurance; and the group approach by which a number of employees are brought together at one time to participate in retirement planning discussions.

Very little is known about the origins of the individual type of program except that early surveys indicate that many companies already had well established programs prior to 1950, and that these efforts were often related to the development of a pension program.

The origins of the group type of preretirement planning program, on the other hand, can be traced to the pioneering work of two American universities: The University of Chicago and The University of Michigan. At The University of Chicago, where work was begun in 1951, the program drew heavily on the research findings of a number of social scientists at the University who were engaged in some of the first studies of the problems and adjustments of older people.[10,11,12]

At present the Industrial Relations Center of The University of Chicago has a well developed program titled "Making the Most of Maturity" which it offers to industries throughout the country,[13,14] and it trains personnel men and others as discussion leaders for programs. The University's Union Research and Education Projects unit also has developed a program titled "Looking Ahead to Retirement" which it offers primarily to labor organizations[15]; it has served effectively as a consultant to labor union groups in the development of materials, and it has a training program for discussion leaders.

The University of Michigan conducted its first educational program for older people during the spring of 1948.[16] Although it was not called preretirement education, it was concerned with and titled "Problems and Adjustments in Later Maturity and Old Age" and was essentially designed to assist persons to adapt to the socio-psychological changes concomitant with aging and retirement. This program, like those at The University of Chicago, was based on earlier studies of the needs and problems of adjustment of older people and was conducted by Clark Tibbitts. Later the program was adapted for use with hourly-rated workers.[17] Other programs were added including a liberal education type discussion program for middle-aged people[18] and programs to train union, industrial and other personnel as discussion leaders for preretirement programs.[19,20]

These first attempts at two American universities to develop educational programs for those on the verge of retirement were based for the most part on the premise that people, as they grow older, face certain crises or problems, and that a fuller understanding of these problem situations should result in better adjustment during the later years. The emphasis on the problems of older people, or as Breen[21] puts it, the dysfunctional aspects of retirement, is no accident. Studies reported at about the same time as the first preretirement programs were making their appearance reveal a wide range of old age problems--reduced income, decreasing physical vigor and health, inadequate housing, a vast increase in leisure time, social isolation, and a lack of opportunity in a society which places a low premium on the older individual. Max Kaplan[22] believes that the situations of older people have not changed much, and that "by far the larger share of attention has to do with issues of health, economic welfare, housing and other social and medical aspects."

Pioneering programs at The Universities of Michigan and Chicago gave impetus to the development of programs at other American universities including Cornell University, Prudue University, University of Connecticut, University of Florida, St. Louis University, and California Institute of Technology. Public school adult education departments, government departments, libraries, YMCA's and churches, as well as an increasing number of industries throughout the United States, are following the lead of the university groups. A few of the larger labor organizations such as the UAW (AFL-CIO); the International Association of Machinists; the United Steelworkers; the Community Services Department, AFL-CIO; the Upholsterers International Union; and District 65 of the Retail, Wholesale and Department Store Union, AFL-CIO, established programs for their members at the local union level. In a few instances labor and management have joined forces in order to develop and sponsor retirement education programs.[19]

Number and Characteristics of Programs

A number of surveys of preretirement education have been made during the past two decades: Equitable Life Assurance Society, 1950; Tuckman and Lorge, 1952; Edwin Shields Hewitt and Associates, 1952; Baker, 1952; B. K. Davis Advertising Service, 1953; National Industrial Conference Board, 1955; the Welfare Federation of Cleveland, 1957; Perrow, 1957; Reich, 1958; the National Council on the Aging, 1958; the Philadelphia

Health and Welfare Council, 1958; Walker, 1958; Mack, 1959; Naef, 1960; Romm, 1960; Breen and Marcus, 1960; Wermel and Beideman, 1961; Franke, 1962; and Shultz, 1963, but differences in the sample of companies studied and in the definition of preparation for retirement programs were so marked that only tentative estimates of trends and character of programs can be made.

One of the surveys (Breen and Marcus, 1960) studied the prevalence of programs in labor organizations. Some of the surveys such as the B. K. Davis Advertising Service survey, the Welfare Federation of Cleveland survey, and the Philadelphia Health and Welfare Council survey described company programs in local communities or regions. Others, including the Equitable Life Assurance Society, Tuckman and Lorge, Hewitt and Associates, National Industrial Conference Board, Wermel and Beideman, and Schultz surveys were national in scope, thereby permitting a better assessment of trends in the United States.

Surveys of Industries

The Equitable Life Assurance Society survey[23] of 355 companies showed that 13 per cent of them had preretirement programs of one kind or another. The 1952 survey by Tuckman and Lorge[24] presented results for 70 of the largest corporations in the country representing a combined work force of 2.5 million persons. Their survey revealed that 37 per cent of the companies had some type of program to prepare employees for retirement. The authors sum up their findings as follows:

> "The most significant finding of this survey is that companies are facing the problems of preparation for retirement at different levels. The majority of respondents having programs in operation cover financial preparation, and the related factor of insurance, hospitalization and surgical benefits. Less attention is given to the physical aspects of aging and steps to maintain health, leisure time and recreation~~,~~ and outside activities and hobbies which may become revenue-producing." (p. 85)

Although Tuckman and Lorge showed that the companies in their survey used various methods to present preretirement programs, approximately two-thirds of them depended primarily upon individual interviews and counseling.

Hewitt and Associates[25] surveyed 657 companies with a combined work - force of 2.5 million. All size and industrial classifications were represented but the authors stated that the sample overrepresented the larger companies in the basic manufacturing industries. They called this a desirable bias because in this way the greatest number of employees and industrial practices were represented.

The Hewitt survey showed that individual interviews were used more often than any other method and that most of these interviews emphasized the probable amount of pension benefit and optional settlement, if any. Only 2.7 per cent of the companies offered educational or lecture programs to stimulate interest in retirement.

One of the larger surveys of preretirement education was the one made in 1954 by the National Industrial Conference Board[26] which studied 327 companies with 4.1 million employees. In answer to the question, "Does your company have any kind of preretirement counseling?" 214 (65.4 per cent) replied in the affirmative. Larger companies were more likely to have preretirement counseling than smaller companies because in this as in the two previous surveys individual counseling dealt for the most part with pension benefits, and the larger companies were more likely to have pension programs.

Whereas in the previous surveys the definition of a preretirement-program was left to the respondent, or a single definition such as preretirement counseling was employed, Wermel and Beideman[27] stated explicitly in their survey of 161 firms (6.0 million employees) that preretirement planning programs consisted of activities beyond those of administering a pension or profit-sharing program and in so doing placed emphasis upon content rather than on method. This survey like the Tuckman and Lorge and the Hewitt and Associates surveys purposely overemphasized the large manufacturing industries.

Results presented in the Wermel and Beideman survey are based on 161 firms which returned questionnaires. Of these 40 per cent reported having a preretirement program. Further, the authors state:

> By far the greatest number of companies reported as offering retirement planning programs to their employees relied primarily upon personal interviews. In 107 of the 161 surveyed firms with programs, analysis of the responses indicated that individual counseling or discussion interviews formed the chief method. . . (p. 75)

For the first time in surveys of preretirement programs, however, one sees evidence that individual counseling had been broadened out to cover more than a discussion of pensions. Wermel and Beideman reported that in the case of 107 companies with individual counseling programs 84 of them scheduled sessions formally and included a broad coverage of topics which were developed in advance of the interview. Only 41 or about one-fourth of the companies reported that their programs were based on the group counseling method.

One of the more recent surveys of company preretirement programs, conducted by Franke[28], is also one of the most trenchant assessments of preretirement education. He identified 43 firms around the country which were reported as having had preretirement programs for a number of years. Franke, like the other authors, found that the most common approach to preretirement planning was through individual interview or counseling with wide variation in the subject matter covered.

One of the special values of Franke's survey is its analysis of company attitudes toward the program and the essential requirements of a preretirement program. The companies in his survey named method more often than any other factor as the most essential requirement of a successful preretirement program. His discussion of criteria for the future development of retirement preparation is an outstanding contribution to the field.

In one of the more recent studies of preretirement programs in industrial settings Shultz[8] found that 1) plants without pension programs rarely, if ever, have preretirement programs, 2) programs are much more likely to be established in large than in small industries (programs rarely occur in plants of less than 500 employees), and 3) programs occur somewhat more frequently in plants with a compulsory retirement age and in non-union plants.

As in previous surveys of preretirement programs in industry Shultz found that personal counseling was used more commonly than any other method for conducting the programs. Approximately half of the programs consisted of only one, two, or, at the most three individual counseling interviews. In this connection Shultz observes: "When one considers the drastic changes in income, interests, activities, motivation, and personal relationships which usually accompany retirement one cannot but have questions concerning the effectiveness of many of these programs to help employees comprehend the problems and opportunities which will be theirs."

On the basis of these surveys of company programs the following tentative conclusions can be reached about trends in preretirement education:

1. The development of preretirement programs is a recent one which parallels closely the growth of pension programs following World War II. Larger industries tend more than smaller ones to offer the service.

2. There appears to have been an increase in the number of programs during the past decade, especially in the number of individual type programs, but the magnitude of the increase is difficult to determine. On the other hand, awareness of the program and interest in exploring its possibilities are fairly widespread. There appears to be more interest on the part of companies than labor unions.

   Whereas many companies deal with the individual in retirement matters, there are probably in the United States fewer than 50 company-sponsored group discussion type programs in which a wide range of topics are discussed.

3. Current programs exhibit extreme variability in content and methods. The individual approach predominates. Some programs consist of merely a single interview with an employee; some consist of several interviews; others consist of weekly group discussion sessions for as many as ten or twelve weeks. Emphasis is most frequently

placed on financial matters. There appears to be a trend, however, in both individual and group programs toward including other topics for discussion.

4. There is little, if any, effort to control the quality of programs or to evaluate results. Companies tend to prefer to utilize their own staff including personnel officers, pension experts, or an industrial relations official to conduct the interviews or lead the discussions and few of them have developed any system for evaluating the effectiveness of their programs. Franke (1963, p.38) suggests this is probably due to the fact that most companies do not view a preparation for retirement program as a major element in the management of the company.

5. Evidence of community involvement in company-sponsored programs is very meager.[29] The fact has already been noted that most companies are concerned with discussing pension benefits with the employee rather than such topics as opportunities in the community for the effective use of leisure time or resources in the community to which the retired employee can turn for help. In the group discussion programs, however, these topics are more likely to be discussed and the company is more likely to request the assistance of staff people from Social Security and State Employment Service, public libraries and local recreation, adult education, and health departments to conduct the program. Under these circumstances one might expect considerably more orientation toward the community.

Preretirement Education in Labor Unions

Breen and Marcus[30] have made the only comprehensive survey of preretirement programs in labor unions. Their objective was to obtain information about existing programs and the attitudes toward preretirement programs on the part of labor officials throughout the country. A questionnaire was mailed to all national and international labor unions and to a randomly selected sample of local unions throughout the country. Some of the respondents were followed up with personal interviews.

Questionnaires were mailed to 796 unions. Twenty-two per cent (173) of these responded. Only four unions, two nationals and two locals, reported that they were doing anything in the field of preretirement education. Accordingly, much of the analysis deals with those unions which do not have programs. Some of the conclusions reached are:

1. Relatively few unions had plans to initiate programs during the twelve months following the survey.

2. It was apparent that almost 85 per cent of the respondents knew virtually nothing about existing union programs, but that nationals were more aware of other unions' activities in the field than were locals.

3. When asked who should conduct the program respondents were equally divided between unions and universities.

4. The largest proportion of unions thought a program should be offered during the year on off hours.

5. There appeared to be no significant relationship between respondents' attitudes toward preretirement education and size of the city in which union was located, regional location of the union, and size of union.

Breen and Marcus[30] sum up their survey by saying:

> "Rather than be discouraged by the lack of information, the dearth of existing programs, or the seeming disinterest in this area as a service of union concern, it is more accurate to describe the present state of union awareness of the problems of older workers as reflective of the whole society. . . . For many unions concern with preretirement education is premature. A union without an adequate comprehensive pension program will naturally place a priority on this benefit. . . . Preretirement education is in its infancy; in time it will become an integral part of the labor union movement in the United States, compatible with the goals, principles and other multiple functions of trade unionism." (p. 46)

Somewhat later than Breen's study the United Auto Workers International Union placed the issue of preretirement education on the bargaining table, but eventually withdrew it in favor of other bargaining issues.

Other Sponsorship

A review of programs sponsored by companies and labor unions fails to reflect the growth of programs which are being sponsored by universities and colleges, public schools, libraries, the various branches of the military service, governmental agencies at both the federal and state levels, YM-YWCA's and church organizations. Information about the extent to which these types of organizations are developing preparation for retirement programs is not available on a nation-wide basis. It would appear, however, that the growth of programs under some of these types of sponsorship may be equal to or even greater than it is under company and union sponsorship.

Preretirement Education in European Countries

A survey made by the author of preretirement education in countries of Western Europe revealed very little awareness of the program in most countries on the continent but a well developed preretirement education program in England and Scotland.[31] In England there is a Preparation for Retirement Committee of the National Old Peoples' Welfare Council which is a central clearing house of information and a source of much program stimulation, and in some communities there are local counterparts of the national committee called Retirement Councils. Unlike the American program the program in Great Britain is supported for the most part with public funds and adult education is the primary sponsor of the program. The program in Great Britain was also found to be more comprehensive than the American program especially in the presentation of ways to use leisure time. British programs were most likely to be offered on company time; the lecture approach was used more often than any other and wives were not encouraged to participate in programs with their husbands.

Preretirement Education Research

Despite an impressive growth in the number and kinds of preretirement education activities during the past two decades, not much is known about their effectiveness. The surveys described in the previous section indicated that there was little, if any, effort to evalute results of programs and only three reports could be found in which a systematic attempt was made to study effects of participation in programs.[32,33,34]

Mack[32] evaluated the effectiveness of preretirement education programs by combining data from 281 subjects who participated in 16 different programs in the Chicago area. The subjects ranged in age from 55 to 82 years with a majority of the subjects between the ages of 60 and 65. They represented various occupational levels, but the author states that skilled and white-collared levels were over represented. Each subject filled out a "Retirement Planning Inventory" at the first and the final sessions of the program. Statistical tests were applied to the differences between the percentages of favorable responses to each statement of the inventory on the pre-test and those of the post-test situations. Mack concluded that the program reduced fear and increased positive attitudes toward retirement, increased constructive planning for retirement, and effected desirable behavior changes in retirement preparation.

At the request of the Niagara Falls Board of Education, the author[33] conducted a program with a mixed group of 73 hourly-rated and salaried employees who ranged in age from 60 to 65 years. These subjects were employed by three Niagara Falls industries, two of which manufactured chemical products and the other, different kinds of business forms. Before and after data were obtained in order to study change in 1) retirement attitudes, 2) retirement planning information, 3) plans for retirement, and 4) plans put into action. It was concluded that significant changes took place in each area investigated except that of retirement attitudes.

Burgess[34] reported results of a research project which compared changes in attitudes and behavior among 200 subjects who participated over a two-year period in a series of preretirement discussion programs as against changes in attitudes and behavior among subjects with no exposure to a program. The highest gains resulting from the program were in retirement planning, financial planning, retirement anticipation, and retirement living. Burgess concluded that there is little doubt that successful adjustments in these four areas are practical conditions to a satisfactory retirement. As in the previous two studies gains did not appear in retirement attitudes. Burgess' report is part of a general statement describing the University of Chicago "Making the Most of Maturity" retirement planning program rather than a detailed research report. Nevertheless, it appears that his study was the first in which a control group was used in preretirement education research.

The finding which was common to the three studies is that it was much more difficult to bring about improvement in retirement attitudes and mental outlook than in retirement information, planning and preparatory behavior, but this has generally been the case in attempts to change peoples' attitudes.

These studies represent the total of research directed to the objective evaluation of the effectiveness of preretirement education. The student of preretirement education will be interested, however, in a growing number of articles which present the opinions of practitioners and others' interest in various aspects of retirement. All but one of the articles, that by C. Perrow, claim one or more kinds of benefits from preretirement education.(see references 30 through 47).

Limitations of Previous Research

The research studies cited above showed some obvious shortcomings. Only one of them used a control-group. The three studies were concerned with immediate rather than long-term effects. In two of the studies[32,34] salaried employees predominated. Hence, there remains considerable question about the effectiveness of preretirement education with manual or hourly-rated workers. Finally, it is not clear to what extent leadership, materials and methods were standardized for each of the preretirement education programs. Neither was information supplied to indicate attempts to tailor-make materials or methods for special groups of older people including those who are foreign born and cannot read or write English with ease. In this respect, Burgess and his associates in their study of occupational differences in attitudes toward aging and retirement concluded that different kinds of preretirement materials are required for at least two occupational levels: one kind for higher level supervisory and executive personnel and another for manual or hourly workers.[48]

Frame of Reference for the Study

Theoretical treatment of preretirement education has been exceedingly meager, if not altogether lacking, but from reviewing preretirement education literature it may be implied that good adjustment in retirement is predicated upon role substitution and the maintenance of activity during the later years. The reasoning behind this assumption is something as follows.

Retirement is a by-product of technological advances which gives every evidence of having become an established facet of American life.

In spite of major efforts to make possible the continuing employment of workers for as long as they are physically able and want to engage in productive work, the trend for the past several decades has been a steady decrease in the proportion of older workers employed. With the continued application of technology, there appears little or no likelihood that the trend will be reversed, and there is some good evidence that the age of normal retirement will be revised still further downward.

One outcome of this trend is that an increasing number of persons are being forced from membership in the productive economy to the status of consumer. The transition from worker with a potentially expanding income to consumer on a fixed and frequently reduced income represents a period of critical adjustment for most people. Studies also show that the transition from a working to a non-working way of life is further aggravated by a loss of status, a vast increase in leisure time, the disruption of well-established patterns of daily living, and restrictions in social life space.

Role Theory

Stated in these terms, retirement is viewed largely in terms of role theory from which may be derived the hypothesis that satisfactory adjustment in retirement will depend on the extent to which the individual is able to replace the work role with other roles which he and society find acceptable. Thus, it can be argued that preretirement education is concerned, among other things, with helping the individual to understand role changes, to assess his potential for assuming different roles, and to anticipate specific ways by which preferred roles can be learned and substituted. A study by Thompson[49] makes it evident, to use his words, that "adjustment to a new status, including the creation of a correlative role, is facilitated and success made more probable if one holds an accurate anticipatory 'cognitive map.' Knowing what to expect, the retiree can more quickly and more successfully program a pattern of living which he can satisfactoily accept." (p. 42)

Implicit in all of this is the assumption as people grow older and retire that they desire or that it is beneficial to change and expand their role activity rather than to be relegated to what Ernest Burgess called the "roleless role" of the retired. In other words, the more active a person is after he retires, the happier and better adjusted he will be. Accordingly, in preretirement education programs older people have been urged to develop new interests, make new social contacts, seek out ways of relating themselves to other people and to the community in which they live, develop a forward looking orientation to life, and stay mentally alert and physically active.

Disengagement Theory

More recently the student of preretirement education has been confronted with a somewhat different conceptualization of the aging process and adjustment to retirement, namely, the disengagement theory developed by Cumming and Henry.[50] In their theory aging is viewed as a natural, inevitable self-perpetuating and mutual withdrawal between the aging person and the social system to which he belongs. Most older people are supposed to welcome disengagement; and, if health and economic independence are guaranteed, the only people who have a retirement problem are those who cannot reintegrate with a membership group and those who cannot shift their skills from instrumental to socio-emotional roles; and even these retirement problems are temporary and self-resolving.

Thus, it could be argued in relation to a theoretical formulation of disengagement that preretirement education will do older people a disservice if it fails to recognize the natural and inevitable tendency of people as they grow older to disengage themselves from the society in which they live. Clearly, present day preretirement programs including the one developed as part of this research were not so orientated.

Psychological Theories

Although present day preretirement education refers for the most part to sociological theory--most program development and investigation has been undertaken by social scientists--there is much about the older individual who participates in preretirement programs which should be understood in any attempt to assess the effects of preretirement education. In this regard Riegel[51] and Kuhlen[52] have produced definitive statements on personality theory and aging and life-adjustment, respectively. Theories of learning and aging and related empirical studies are summarized in Part Four on Psychological Characteristics of Aging in the Handbook of Aging and the Individual, James Birren, editor[53] and in Psychological Aspects of Aging, John E. Anderson, editor.[54] Because preretirement or adult education in general is not the concern of these volumes one may, also, profitably refer to Anderson[55] and Lorge[56] for their insightful treatment of the learning process with special reference to the older person in adult education programs including preretirement education programs.

Group Process Concepts

Various group process oriented purposes were established for the preretirement education program which was offered as part of the present research:

1. The program should create a permissive atmosphere in which participants are comfortable and free to express their concerns, interests, goals, fears, and expectations.

2. Participants should be encouraged to make the program their own. In other words, they should have the opportunity to accept, reject or modify the over-all topical plan which was initially presented to them.

3. Husbands and wives should be encouraged to share their views of retirement and to make joint decisions about the future.

4. Members of the group should be encouraged to recognize that the problems of aging are fairly common, and that a good many people share fears and concerns about retirement.

5. The program should provide opportunity for people to interchange ideas and experiences.

6. Misinformation and misconceptions about aging and retirement should be vigorously challenged.

7. Ample opportunity should be provided for members to acquire complete, accurate, up-to-date information about a variety of retirement situations. For example, it was decided that members of the preretirement groups should obtain accurate information about the amount of income from all sources they would have to live on in retirement.

8. The program should expose participants to the gamut of retirement problems and situations which has been found among older people in the United States.

9. Members should be made aware of different solutions to retirement problems and encouraged to select one or more solutions which seem to be appropriate as a basis for developing plans of action.

10. Members should be encouraged to put their decisions about the future into effect.

11. Participants should be given problem-solving experiences in the group.

12. The program should stimulate continued learning, planning and decision-making between sessions and following completion of the program.

13. Finally, the program should present a positive view of retirement and encourage participants to develop or reinforce an anticipatory attitude toward retirement.

It was presumed that discussion in a group setting was the most effective method for achieving many of the above goals. In this regard Bond,[57] Hill[58] and McKeachie[59] have reviewed the important studies of the past decade which compared the discussion method with the lecture and other methods. Although these reviewers show that the results of most of the studies were consistent with our presumption of the greater effectiveness of the discussion method, it should be noted that the evidence was not overwhelmingly in favor of one method or another.

Perhaps of even greater import is the fact that none of these studies were conducted with older adults as subjects or in adult education settings.

Problems in Conceptualization

Although common sense appears to support many of the currant theoretical formulations, investigators of preretirement education are plagued by pressing issues. In the absence of clear-cut cultural definitions of roles for the later years, how is it possible to help older people acquire a "cognitive map" of the road ahead? What is the evidence that activity enhances adjustment during the later years?

With respect to cultural prescriptions for roles in retirement – Donahue et al[60] observed that issues arise because the institutionalization of retirement has created role changes which as yet have not been assimilated into the normative structure of society. Thus, they maintain that the role transition to retirement is one involving a large degree of ambiguity and uncertainty. This means that the establishment of criteria for preretirement planning programs is likely to be difficult. Even so, the position was taken that preretirement education could become an important setting in which to encourage older people to discuss social roles and to visualize ways by which they could be practiced.

Related also to the situation as Donahue et al described it is the thorny problem of what is meant by adjustment during the later years. A valid definition of adjustment in retirement is of primary importance because in the long run, unless one can define adjustment and is able to apply valid measures to reveal either the presence or absence of adjustment, he is in the disadvantaged position of studying the effects of a program without acceptable means with which to do so. This was the issue, in effect, which Cavan et al[61] had in mind when they postulated that their adjustment inventory had immense practical value in measuring the effects of many kinds of programs for older people.

The validity of this and other adjustment indexes such as morale scales and self-image scales, moreover, are being subjected to serious criticism. For example, Rosow[62] questioned their validity on the basis that each of them regards adjustment as a state or condition at a point in time. He maintains that adjustment is also a process and that "the only way to evaluate conditions in later life is to compare them with some earlier patterns. These are value-free criteria, the best available objective standards for interpreting stability and change. It also follows that in the absence of significant cultural or group norms, the individual himself must be taken as the source of standards." (p. 25)

What does this mean for research in preretirement education? If – the fact is accepted that most basic research in this field will inevitably come to grips with the question of adjustment, and how to measure it, then careful attention is required to the instruments which are employed. This much is required even though research needs of the moment force a selection from what is now available. In addition, Rosow's penetrating analyses of the situation with special reference to a time perspective prompts serious consideration of the use of intensive interviews, life history data on a longitudinal basis and in the interests of economy, the use of retrospective data.

Summary

In sum, the content of the educational program which participants in this research were asked to accept or modify in the light of their own need and concerns was conditioned initially by findings of a number of creditable studies which concluded that as people grow older they are likely to be confronted with certain crises, changes, problems, or tasks of everyday living which must be resolved if retirement is going to be a satisfying period of one's life. Accordingly, the program was designed not only to make participants aware of the gamut of retirement contingencies, but also to provide them with as much information as possible about each contingency.

Having encouraged participants to come to grips ahead of time with the reality of retirement, the basic premise underlying the program was that each participant would benefit from exploring various substitutes for the work role including roles within such institutional settings as the church, school, union, social club, citizenship roles, community service roles, and others. To facilitate the acquisition of substitute roles, workers in the program discussed the possibility of cultivating new interests, making new friends, helping other people, taking part in public elections, becoming involved in the social issues within their neighborhood and community, and so forth. Continuation of the work role after retirement, at least on a part-time basis, was of interest to a few older people; and, accordingly there was the opportunity to discuss job opportunities and techniques for finding employment.

References

1. Donahue, Wilma, Hunter, W.W., Coons, Dorothy H., and Maurice, Helen K. (eds.). 1958. Free time--challenge to later maturity. Ann Arbor: University of Michigan Press.

2. Corson, J. J., and McConnell, J. W. 1956. Economic needs of older people. New York: Twentieth Century Fund.

3. Friedmann, E. A., and Havighurst, R. J. 1954. The meaning of work and retirement. Chicago: University of Chicago Press.

4. Collins, S. D. 1955. A review of illness from chronic disease and its variations with age, sex, and season, with some trends. J. Chronic Dis., 1, 412-41.

5. Donahue, Wilma (ed.). 1955. Education for later maturity. New York: Whiteside, Inc., and William Morrow & Co.

6. Hunter, W. W. 1960. Preretirement education. Geriatrics, 15, 793-800.

7. Groombridge, B. 1960. Education and retirement. London and Exeter: William Chudley & Son Ltd.

8. Shultz, E. B. 1963. A study of preparation for retirement in industry. Ithaca, New York: Cornell University, New York State School of Industrial and Labor Relations. (Mimeographed)

9. Odell, C. 1959. Employment and preretirement problems of the older workers, Part III: Retirement preparation education--an ounce of prevention. Geriatrics, 14, 591-94.

10. Cavan, Ruth S., Burgess, E. W., Havighurst, R. J., and Goldhamer, H. 1949. Personal adjustment in old age, pp. 143-48. Chicago: Science Research Associates, Inc.

11. Havighurst, R. J., and Albrecht, Ruth. 1953. Older people. New York: Longmans, Green & Co.

12. Friedmann, E. A., and Havighurst, R. J. 1954. The meaning of work and retirement. Chicago: University of Chicago Press.

13. Burns, R. K. 1960. Meeting the challenge of retirement. Chicago: Industrial Relations Center, University of Chicago.

14. Burgess, E. W. 1960. A case study of a retirement preparation program. ("Guideposts to effective action in aging. Case study No. 5: The Chicago retirement planning and preparation program.")

15. _____. 1959. Looking ahead to retirement--a retirement education program--discussion guide. Chicago: University of Chicago, Union Research and Education Projects.

16. Tibbitts, C. 1948. Aging and living, a report of the first course offered to assist people in making adjustments to old age. Adult Education Bull., 12, 204.

17. Hunter, W. W. 1956. A study of methods for developing a pre-retirement conditioning program for use by the Upholsterers' International Union locals. (Paper read at the First Pan-American Congress of Gerontology, Mexico City.) Ann Arbor: The University of Michigan, Division of Gerontology. (Mimeographed)

18. Tibbitts, C., and Donahue, Wilma. 1960. Aging in today's society. New York: Prentice-Hall.

19. Hunter, W. W. 1965. Cooperation between industry and labor in retirement education. Ann Arbor: The University of Michigan, Division of Gerontology. (Mimeographed)

20. Hunter, W. W. 1960. Pre-retirement education. Geriatrics, 15, 793-800.

21. Breen, L. Z. 1962. Retirement: norms, behavior and functional aspects. In R. H. Williams, Wilma Donahue, and C. Tibbitts (eds.), Psychological and social processes of aging--an international seminar. New York: Columbia University Press.

22. Kaplan, M. 1961. Toward a theory of leisure for social gerontology. In R. Kleemeier (ed.), Aging and leisure, pp. 389-412. New York: Oxford University Press.

23. Equitable Life Assurance Society. 1950. Survey of retirement practices. New York: The Society. (Mimeographed)

24. Tuckman, J., and Lorge I. 1952. Retirement practices in business and industry. J. Gerontol., 7, 77-86.

25. Hewitt, Edwin Shields, and Associates. 1952. Company practices regarding older workers and retirement. Libertyville, Ill.: Edwin Shields Hewitt & Associates.

26. National Industrial Conference Board. 1955. Retirement of employees--policies, procedures, practices. ("Studies in Personnel Policy," No. 148.) pp. 31-36. New York: The Board.

27. Wermel, M. T., and Beideman, Geraldine. 1961. Retirement preparation programs: a study of company responsibilities. Pasadena, Cal.: California Institute of Technology, Industrial Relations Section.

28. Franke, W. H. 1962. Preparing workers for retirement, p. 26. Univ. of Ill. Bull., Vol. 59, No. 53.

29. Hunter, W. W. 1967. Cooperation between industry, labor and the community in retirement education. Community Development, n.s. 17-18, pp. 103-118.

30. Breen, L. Z., and Marcus, P. M. 1960. Pre-retirement education among labor unions in the United States. Lafayette, Indiana: Purdue University, Department of Sociology.

31. Hunter, W. W. 1965. A cross-national appraisal of preretirement education, Ann Arbor: The University of Michigan, Division of Gerontology. (Mimeographed)

32. Mack, Marjory J. 1958. An evaluation of a retirement-planning program. J. Gerontol., 13, 198-202.

33. Hunter, W. W. 1957. Preparation for retirement of hourly wage employees in Niagara Falls, New York. Ann Arbor: The University of Michigan, Division of Gerontology. (Mimeographed)

34. Burgess, E. W. 1960. A case study of a retirement preparation program. ("Guideposts to effective action in aging. Case study No. 5: The Chicago retirement planning and preparation program.")

35. ____. 1951. Preparing employees for retirement. New York: American Management Association.

36. Boyle, C. P. 1952. Helping employees adjust to retirement. Personnel, 29, 261-74.

37. Delaney, H. B. 1953. Pre-retirement aid, retirement aid and counseling In The problem of making a living while growing old: proceedings of the Second Joint Conference, pp. 330-37. Philadelphia: Temple University School of Business Administration.

38. Donahue, Wilma. 1950. Preparation for living in the later years. Adult Education, 1, 43-51.

39. Douglas, Martha A. 1955. A preparation for retirement program. (Publication No. 109.) Chicago: Research Council for Economic Security.

40. Hunter, W. W. 1956. A study of methods for developing a pre-retirement conditioning program for use by the Upholsterers' International Union locals. (Paper read at the First Pan-American Congress of Gerontology, Mexico City.) Ann Arbor: The University of Michigan, Division of Gerontology. (Mimeographed)

41. Mack, Marjory J. 1954. A retirement planning program. J. Business of University of Chicago, 27, 169-76.

42. Noetzel, A. 1952. Preparation of industrial workers for retirement. Pittsburgh: Health and Welfare Federation of Alleghany County. (Mimeographed)

43. Odell, C. 1959. Employment and pre-retirement problems of the older workers, Part III: Retirement preparation education--an ounce of prevention. Geriatrics, 14, 591-94.

44. Perrow, C. 1957. Are retirement adjustment programs necessary? Harvard Business Rev., 35 (July-August), 109-15.

45. Segal, M. E. 1959. A program of retirement counseling for public employees. New York: Retirement Advisors, Inc. (Mimeographed)

46. Shultz, E. B. 1959. Selective retirement and pre-retirement counseling in the T.V.A. Industrial & Labor Relations, 12, 206-13.

47. Breen, L. Z., and Marcus, P. M. 1960. Pre-retirement education among labor unions in the United States. Lafayette, Indiana: Purdue University, Department of Sociology.

48. Burgess, E. W., Corey, L. G., Pineo, P. C., and Thornbury, R. T. 1958. Occupational differences in attitudes toward aging and retirement. J. Gerontol., 13, 203-6.

49. Thompson, W. E. 1958. Pre-retirement anticipation and adjustment in retirement. J. Social Issues, 14, No. 2, 35-45.

50. Cumming, Elaine, and Henry, W. E. 1961. Growing old: the process of disengagement. New York: Basic Books, Inc.

51. Riegel, K. F. 1959. Personality theory and aging. In J. Birren (ed.), Handbook of aging and the individual, pp. 797-851. Chicago: University of Chicago Press.

52. Kuhlen, R. G. 1959. Aging and life adjustment. In J. Birren (ed.), Handbook of aging and the individual, pp. 852-897. Chicago: University of Chicago Press.

53. Breen, L. Z. 1962. Retirement: norms, behavior, and functional aspects. In C. Tibbitts (ed.), Aging around the world, Vol. 1. New York: Columbia University Press.

54. Anderson, J. E. (ed.). 1956. Psychological aspects of aging. Washington, D. C.: American Psychological Association, Inc.

55. Anderson, J. E. 1955. Teaching and learning. In Wilma Donahue (ed.), Education for later maturity, pp. 60-94. New York: Whiteside, Inc. and William Morrow & Company, Inc.

56. Lorge, I. 1955. Capacities of older adults. In Wilma Donahue (ed.), Education for later maturity, pp. 36-59. New York: Whiteside, Inc. and William Morrow & Company, Inc.

57. Bond, Betty W. 1956. Group Discussion--decision. Minneapolis, Minnesota: Minnesota Dept. of Health.

58. Hill, R. J. 1960. A comparative study of lecture and discussion methods. White Plains, New York: The Fund for Adult Education.

59. McKeachie, W. J. 1963. Research on teaching at the college and university level. In N. L. Gage (ed.), Handbook of research on teaching. Chicago: Rand McNally and Co.

60. Donahue, Wilma, Orbach, H. L., and Pollak, O. 1960. Retirement: the emerging social pattern. In C. Tibbitts (ed.), Handbook of social gerontology, pp. 399-406. Chicago: University of Chicago Press.

61. Cavan, Ruth S., Burgess, E. W., Havighurst, R. J., and Goldhamer, H. 1949. Personal adjustment in old age, pp. 143-148. Chicago: Science Research Associates, Inc.

62. Rosow, I. Adjustment of the normal aged: concept and measurements. 1963. In R. H. Williams, C. Tibbitts, and Wilma Donahue (eds.), Processes of aging: social and psychological perspectives of aging--an international seminar, Vol. 2, pp. 195-223. New York: Atherton Press.

II. PURPOSES AND METHODS OF THE STUDY

The previous chapter described retirement as a process by which individuals at increasingly younger ages change from a work focused to a leisure focused way of life. Although the transition creates tension and problems of adjustment, the position was taken that the period of retirement need not become a period of uselessness, frustration and dissatisfaction; and, it was reported that a few gerontologist-educators had developed preretirement education programs which were presumed to help adults adjust to the retirement years.

Several techniques were employed to offer the programs including group discussions, lectures by experts, and the use of films, autobiographical experiences, exhibits, and reading materials. The surveys of preretirement education which were reviewed showed, however, that many more individual type counseling programs than group discussion programs have been offered, that industrial organizations have predominated as sponsors of programs, that the content and methods of individual and group discussion type programs have varied considerably and that the most recent emphasis in the field is that of providing preretirement programs for hourly-rated industrial workers in contrast with earlier efforts to develop programs for salaried personnel.

Despite the new emphasis, preretirement education for lower-level occupational groups was shown to be an untested program. Accordingly, the Division of Gerontology undertook, with support from the U.S. Office of Education, to develop and test special program materials and methods for hourly-rated workers and to conduct an experimental study of their effectiveness with hourly rated workers in a standardized group discussion type preretirement education program.[1] Having made the first step in a systematic preparation of materials and their assessment in preretirement education, the present study was designed to assess program effects during the years after retirement. For example: Is the older worker who participates in a preretirement education program more likely than the worker who does not participate in a program to manage his retirement income effectively? Is he more likely to find satsifactory ways to utilize his leisure time? Is he less likely to become isolated from friends and community? Is he more likely to take steps to maintain good physical health? Is he more likely to maintain satisfactory family relationships?

The present study proposed to seek answers to these questions by extending the earlier study of preretirement education to additional groups of hourly-rated workers and to conduct a longitudinal evaluation of the effects of preretirement education on attitudes and behavior after retirement of two panels of older workers, one of which participated in a preretirement program.

It appears that the majority of older people eventually achieve adjustment to retirement which is more or less satisfactory, but there is little evidence in the professional literature to indicate how long it takes to achieve a new equilibrium, whether some people take less time than others, or whether a preretirement education program can shorten the time that is required to make satisfactory adaptations to a non-working way of life.

Hence, the present longitudinal study was concerned with assessing the effects of an educational program on both the temporal and qualitative aspects of adjustment following separation from work.

The Preliminary Study

Before discussing the design of the longitudinal study a brief consideration of the preliminary research project seems indicated because many of the procedures for the longitudinal study were the same as those used in the preliminary study. The purposes of the earlier study as stated above were to develop and test materials and methods and to determine their effectiveness with hourly-rated workers in a group discussion type preretirement education program. To achieve the first of these goals, five types of materials were prepared especially for use with hourly-rated workers--a series of subject matter booklets dealing with such topics as health, leisure time, and financial planning; a handbook of short stories based on case histories of older people and their way of handling different retirement situations;[2] a series of seven 16mm sound films, each approximately 4 minutes in duration;[3] a series of 20 still pictures[4] and a leader's manual covering methods for organizing and conducting the program.[5] The content booklets and the short stories were prepared at an eighth grade level of reading difficulty. The purpose of the reading material was to prompt thinking between sessions and to raise questions for discussion. The films and the still pictures were developed along Thematic Apperception Test lines. Thus, the viewer was expected to elaborate on what was happening and to decide how things would work out. The reading and the visual materials were intended to complement each other as means by which participants in a preretirement education program, some of whom would not be easily able to read English, would be alerted to a range of retirement contingencies, and, more importantly, would be given practice in thinking through typical situations and deciding on approporate solutions.

Following their preparation, the various kinds of materials were tested in an experimental study of two groups of hourly-rated workers, one of which used the materials in a group discussion type preretirement education program. The group discussion program consisted of ten weekly sessions which both the worker and his spouse were eligible to attend. Participants helped to determine the content of the discussions. In addition to the author, who served as discussion leader for all of the programs, various kinds of resource people such as a lawyer, physician, a librarian, and a retired worker and his wife took part to answer questions and to react to plans and problems presented by the retiring workers.

Subjects for the preliminary study consisted of hourly-rated male workers 60 years of age and older who were gainfully employed in automobile assembly type plants located in the Detroit Metropolitan Area. Accordingly, by definition, the sex, residence, occupations, employment status, and average income of subjects were more or less standardized from the beginning. The first step in selecting subjects was that of identifying a number of United Auto Workers local unions which were willing to cooperate in the study by calling mass meetings of their older workers, by encouraging those workers who had made plans to retire within a specified period of time to participate in the study and by providing facilities in which to offer the programs. In general, each local union represented a different automobile plant or workforce. Hence the decision to select subjects from a single plant or from two different plants depended in large part on opportunity to control the effects of subjects in the experimental and control groups communicating with each other about the project and its programs.

Of necessity, participation of older workers in the research program was voluntary. The majority of wives of the experimental subjects accepted the invitation to participate with their husbands in the programs. Since each discussion group was limited to approximately 25 members, the inclusion of the wives had the effect of increasing the number of programs that had to be offered. Data were obtained from the wives, however, to evaluate their participation in the program and their role in the retirement of their husbands.

The invitation to workers and their wives to participate in the study was presented at a series of mass meetings held at local union halls. The announced purpose of each mass meeting for experimental subjects was to answer questions about the financial aspects of retirement and to give older members of the union the opportunity to take part in a program designed to prepare them for retirement. In the case of mass meetings for control subjects the announced purpose of the meetings was to answer questions about the financial aspects of retirement. During the course of the meeting prospective retirees were asked to serve as control subjects by permitting an interviewer to come to their homes and talk with them about various aspects of retirement. The purpose of these interviews with control subjects was stated in terms of the interest of the local UAW union and the University in developing the best possible preparation for retirement programs for older automobile workers generally.

Voluntary participation of these kinds undoubtedly resulted in a selection of subjects, but the manner by which the selection took place was not known since data were not obtained from persons who did not volunteer to serve as subjects. Despite the selection it was presumed that study findings would be useful because it is unlikely that future preretirement education programs would be organized on anything but a voluntary basis similar to the one used in this study.

Not only was it necessary to use volunteers, but only those volunteers who intended to retire within the period of the study could be accepted. To forestall negative reactions on the part of those who were denied the opportunity to participate, it was stated that identical programs would be offered as soon as possible following the original programs. This promise has been kept in each of the locals which supplied subjects for the research project.

Three out of a group of eleven local unions were selected as the most appropriate sources of subjects for the preliminary study, two as sources of control subjects and one as a source of experimental subjects. The distance between the locals which supplied experimental and control subjects was approximately 10 miles.

Table 1 shows that 183 subjects volunteered initially for the preliminary study but that 41 subjects were lost to the study for one reason or another, leaving 142 subjects in the final study population, 88 workers and 54 wives. The principal reasons for losing subjects during the preliminary study were refusal to be interviewed or failure to attend at least seven of the ten discussion meetings.

TABLE 1. SUBJECTS FOR THE PRELIMINARY STUDY

Categories	Experimental subjects from local union A	Control subjects from local unions A & B	All subjects
Total initial volunteers			
Workers	48	60	108
Wives	33	42	75
Totals	81	102	183
Subjects lost to the study			
Workers	12	8	20
Wives	8	13	21
Totals	20	21	41
Study population			
Workers	36	52	88
Wives	25	29	54
Totals	61	81	142

Subjects for the Longitudinal Study

It was anticipated that not all of the 88 workers from the preliminary study would be available for as long as two years following retirement. Some of them would move away, there would be refusals to cooperate in the interviews and others would die. Accordingly, to insure an adequate number of workers for a longitudinal panel of experimental subjects, preretirement education programs were offered to 49 new subjects who were selected and included in the research project in the same manner as the original or old group of experimental subjects. Wives of new experimental subjects took part in the programs but they were not included in the longitudinal study.

Similarily, 37 new control subjects were added to the 52 old control subjects already on hand (see Table 2). Thus, it was expected that an initial longitudinal study population of 174 subjects would yield a final study population of at least 100 subjects, approximately fifty in the experimental and control categories. As a matter of fact, attrition was less than expected. Table 3 summarizes the number of subjects which was available at various phases of the longitudinal study.- The maximum number of subjects for whom data were available at the pre-retirement and also at the first retirement interview phase was 140 subjects. By the time the second or final retirement interview was completed this number had decreased to 122 subjects, 63 experimental and 59 control subjects.

TABLE 2. OLD AND NEW SUBJECTS FOR THE LONGITUDINAL STUDY

Subjects	Experimental	Control	Both groups
Old subjects	36	52	88
New subjects	49	37	86
Totals	85	89	174

TABLE 3. NUMBER OF SUBJECTS AVAILABLE AT THE VARIOUS PHASES OF THE STUDY

Phases of the longitudinal study	Number of subjects		
	Experimental	Control	Both groups
Pre-study phase	85	39	174
Pre-retirement interview phase (Pre-R1)[a]	70	70	140
First retirement interview phase (R-1)[b]	70	70	140
Second retirement interview phase (R-2)[c]	63	59	122

[a] During the year prior to retirement.
[b] 6 to 12 months after retirement.
[c] 18 to 24 months after retirement.

Comparability of Study Groups Before Retirement

It was not feasible, as pointed out earlier, to determine arbitrarily the specific composition of the experimental and control groups for the study or to randomly select subjects. On the other hand, certain controls were exercised which were intended to increase the comparability of the two groups and justify the statistical evaluation of program effects. All subjects were males, 50 to 68 years of age, who expected to retire within a uniform period of time under provisions of the same negotiated pension system. Also, by definition, all subjects were employed full time on hourly-rated jobs in assembly type automobile plants. All subjects lived and worked in the Metropolitan Detroit Area.

Presumably, initial controls of these kinds could have the effect of increasing the comparability of the experimental and control populations on such other socio-economic variables as standard of living, - income while working, income after retirement, attitudes toward retirement, educational status and health status.

All subjects volunteered to take part in the study during a mass meeting which had been called by their local union on the subject of retirement. What effect selection of this kind would have on the composition of the experimental and control groups was not known. It was presumed, however, that the effects of self-selection, whatever they might be, would operate similarly in the two groups because identical purposes were announced for the meetings. Moreover, testing the program with volunteer subjects was presumed to be acceptable because in practice membership in preretirement education programs is most likely to be on a voluntary rather than a compulsory basis.

During the initial interview with experimental and control subjects, data were collected for purposes of comparing the study populations. In addition, attempts were made to obtain from employers similar data describing automobile workers generally in the Detroit area, but without success. Thus, it was not possible to compare the study samples with the larger population of Detroit automobile workers from which they were drawn.

Age Comparisons

The age of the older workers ranged from 56 to 68 years with mean ages of 63.5 and 62.0 for the experimental and control populations respectively. The difference of 1.5 years is due probably to the fact that the new cohort of control subjects was added following negotiations which made retirement as early as age 55 possible and more attractive. Although the control group tended to be significantly younger than the experimental group, Table 4 shows that most of the subjects in either category were 60 to 64, or 65 to 69 years old. This is understandable because at the time of the study most automobile workers expected to retire at ages 62 or 65, or to wait until age 68 when it was mandatory to retire. As pointed out earlier, all subjects expected to retire within a specified period of time. This rather than age was considered to be the important independent variable (see Table 4 on following page).

TABLE 4. COMPARISON OF EXPERIMENTAL AND CONTROL POPULATIONS ON THE BASIS OF AGE (PRE-R1)[a]

Age categories[b]	Experimental (n-70)	Control (n-70)	Both groups (n-140)
55 - 59 years	1%	14%	8%
60 - 64	64	67	66
65 - 69	34	19	26
Totals	99	100	100
Mean age	63.5	62.0	62.8

[a] (Pre-R1) indicates data were collected during the year prior to retirement.

[b] $t = 3.63$, $df = 138$, $p < .01$

Marital Status

As shown in Table 5 the experimental and control groups were well matched on the basis of marital status. The majority of the subjects were married. Both groups contained a few subjects, however, who had never married, or were separated, widowed or divorced.

TABLE 5. COMPARISON OF EXPERIMENTAL AND CONTROL SUBJECTS ON THE BASIS OF MARITAL STATUS (PRE-R1)

Marital status	Experimental (n-70)	Control (n-70)	Both-groups (n-140)
Never married	10%	6%	8%
Married, living with spouse	84	87	86
Separated, widowed or divorced	6	7	6
Totals	100	100	100

Chi-square = .96, $df = 2$, $p > .05$

Nearly three-fourths of the wives of experimental subjects attended the preretirement education programs with their husbands.

Race

Racial composition was comparable in the two study populations (see Table 6 on following page). The majority of subjects in both groups were white.

TABLE 6. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF RACE (PRE-R1)

Race	Experimental (n-70)	Control (n-70)	Both groups (n-140)
Negro	11%	14%	13%
White	89	86	87
Totals	100	100	100

Chi-square = .06, df = 1, $p > .05$

Birthplace

It was presumed that the birthplace of subjects and its relationship to their ability to read and understand the English language might have a bearing on program results. Table 7 shows that observed differences between experimental and control subjects in regard to birthplace or the language spoken in the country where they were born were not significant.

TABLE 7. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF BIRTHPLACE AND LANGUAGE SPOKEN AT PLACE OF BIRTH (PRE-R1)

Birthplace and language spoken at place of birth	Experimental (n-70)	Control (n-70)	Both groups (n-140)
Birthplace[a]			
In the United States	49%	70%	59%
In a foreign country	48	30	39
No information[c]	3		1
Totals	100	100	99
Language spoken at place of birth[b]			
English	66%	81%	73%
Non-English	31	19	25
No information[c]	3		1
Totals	100	100	99

[a] Chi-square = 3.33, df = 1, $p > .05$

[b] Chi-square = 2.77, df = 1, $p > .05$

[c] Unless otherwise stated the "no information" category was not included in these or subsequent chi-square computations.

Educational Status

Four factors were used to compare the educational status of experimental and control subjects: 1) number of grades completed in school, 2) other schooling completed, 3) difficulty reading and writing English, and 4) ability to read or write another language. As shown in Table 8,

TABLE 8. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED BY EDUCATIONAL STATUS (PRE-R1)

Educational status	Experimental (n-70)	Control (n-70)	Both-groups (n-140)
Number of school grades completed[a]			
Elementary school	73%	67%	70%
High school	19	29	24
College	7	3	5
No information	1	1	1
Totals	100	100	100
Average number of grades	8.2	7.6	7.9
Other schooling[b]			
Yes	24%	33%	29%
No	71	67	69
No information	4		2
Totals	99	100	100
Difficulty reading and writing English[c]			
No trouble	60%	83%	71%
Very little trouble	21	4	13
Some trouble	14	10	12
A lot of trouble	4	3	4
Totals	99	100	100
Ability to read or write another language			
Yes	33%	31%	32%
No	67	69	68
Totals	100	100	100

[a] Chi-square = 2.93, df = 2, $p > .05$

[b] Chi-square = .60, df = 1, $p > .05$

[c] Chi-square = .49, df = 1, $p > .05$, "No trouble" category combined with "Very little trouble," and "Some trouble" combined with "A lot of trouble."

differences between experimental and control subjects were not significant.

Table 8 also shows that the average educational level of the subjects in this study is almost identical with the educational attainment level of the general older population in the United States. One-fourth of the experimental subjects and approximately one-third of the control subjects had had some other schooling. The most frequent other schooling was for purposes of learning a trade or industrial skill. Sixteen per cent of the total study population had some or a lot of trouble reading and writing English. This does not mean, however, that subjects having trouble reading English were illiterate. One-third of the total population was able to read or write a foreign language.

Residential Status

Information describing the types of dwellings in which subjects lived, the number of problems they had with their dwellings, the length of residence in the community, and plans to move or not to move were obtained for purposes of comparing the residential status of experimental and control subjects. The length of residence is compared in Table 9, while the other residential factors are presented in Table 10.

TABLE 9. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED BY YEARS OF RESIDENCE IN THE COMMUNITY (PRE-R1)

Years of residence in the community[a]	Experimental (n-70)	Control (n-70)	Both groups (n-140)
0 - 9 years	16%	16%	16%
10 - 19	29	14	21
20 - 29	11	30	21
30 - 39	17	9	12
40 - 49	17	18	18
50 - 59	6	6	6
60 - 69	3	3	3
No information	1	4	3
Totals	100	100	100
Average years of residence	26.1	25.8	26.0

[a] $t = .13$, $df = 134$, $p > .05$

Length of residence ranged from a maximum of 55 to a minimum of two years. The average for experimental and control groups was approximately 26 years of residence.

Not only were both groups of subjects equally well established in their present homes, it appears from Table 10 on the next page that the groups were comprised for the most part of homeowners. In general, subjects in this study expressed few problems with their homes. There were statistically

TABLE 10. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED BY HOME OWNERSHIP, PROBLEMS WITH THE HOME AND PLANS TO MOVE (PRE-R1)

Residential status	Experimental (n-70)	Control (n-70)	Both-groups (n-140)
Home ownership			
Own home	84%	84%	84%
Rent home or other arrangements	16	16	16
Totals	100	100	100
Problems with home			
No problems	79%	80%	79%
One, two or three problems	21	19	21
Totals	100	99	99
Plans to move[a]			
Yes	10%	18%	13%
No	40	59	49
Undecided	50	24	37
Totals	100	101	99

[a] Chi-square = 10.00, df = 2, $p < .01$

significant differences in their attitude toward moving after they retired. Control subjects tended more to state plans to move, while a larger proportion of experimental subjects were undecided about moving.

Health Status

A significantly larger proportion of control than of experimental subjects assessed their health as good (see Table 11). Not only did

TABLE 11. SELF-RATING OF HEALTH OF EXPERIMENTAL AND CONTROL SUBJECTS (PRE-R1)

Self-rating of health	Experimental (n-70)	Control (n-70)	Both-groups (n-140)
Poor	7%	5%	7%
Fair	59	34	46
Good	34	60	47
Totals	100	99	100

Chi-square = 9.47, df = 2, $p < .01$

control subjects give themselves a better health rating, they also tended, as shown in Table 12, to worry about their health less than the experimental subjects. This difference could be a function of the fact that control subjects were somewhat younger than experimental subjects (see Table 4).

TABLE 12. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF WORRY ABOUT HEALTH (PRE-R1)

Extent of worry over health	Experimental (n-70)	Control (n-70)	Both groups (n-140)
Often	10%	10%	10%
Sometimes	47	19	33
Hardly ever or never	43	71	57
Totals	100	100	100

Chi-square = 13.70, df = 2, $p < .01$

Despite those differences in health rating and extent of worry about health, Table 13 shows that experimental and control subjects did not

TABLE 13. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF RECENT CHANGE IN HEALTH AND HAVING HEALTH PROBLEMS (PRE-R1)

Health status	Experimental (n-70)	Control (n-70)	Both groups (n-140)
Recent change in health[a]			
No change	11%	11%	11%
Change for better	80	84	82
Change for worse	9	4	6
Totals	100	99	99
Present health problems[b]			
Yes	30%	34%	32%
No	69	66	67
No information	1		1
Totals	100	100	100

[a] Chi-square = 1.08, df = 2, $p > .05$
[b] Chi-square = .09, df = 1, $p > .05$

differ significantly in their responses to the questions:

1. Has your health changed during the past year?
2. Do you have any particular physical or health problems at present?

Hence, it could be assumed that differences in health rating and worry over health were the result of long-standing rather than current health problems among the experimental subjects.

Occupational Status

The control group was engaged in a significantly higher proportion of skilled and semi-skilled jobs than the experimental group (see Table 14).

TABLE 14. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED BY OCCUPATIONS (PRE-R1)

Type of occupation	Experimental (n-70)	Control (n-70)	Both-groups (n-140)
Skilled	30%	41%	36%
Semi-skilled	23	34	29
Unskilled	47	23	35
No information		1	1
Totals	100	99	101

Chi-square = 8.77, df = 2, $p < .01$

Data were also collected which showed that, on an average, experimental subjects had spent 19 years on the job while control subjects had spent between 20 and 21 years on the job.

The attitude of the subjects toward their work was indexed by their responses to three questions:

1. How much do you enjoy your present job?
2. Would you like to change to some other job or department, if given the chance?
3. How often do you worry about being able to do your job?

Table 15 on the next page summarizes their responses and shows that both groups enjoyed their jobs equally well. There were significant differences, however, in the proportions of experimental and control subjects who were undecided about wanting to change their jobs or who were worried about

TABLE 15. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED BY THEIR ATTITUDES TOWARD THEIR JOBS (PRE-R1)

Attitude toward the job	Experimental (n-70)	Control (n-70)	Both groups (n-140)
Attitude toward job[a]			
Enjoyed job	84%	89%	86%
Did not enjoy job	15	11	13
No information	1		1
Totals	100	100	100
Desire to change job[b]			
Yes	13%	16%	14%
No	19	9	14
Undecided	67	76	71
No information	1		
Totals	100	101	99
Worry about job[c]			
Often	4%	7%	6%
Sometimes	21	11	16
Hardly ever	73	80	76
No information	1	1	1
Totals	99	99	99

[a] Chi-square = .08, df = 1, $p > .05$
[b] Chi-square = 41.12, df = 2, $p < .01$
[c] Chi-square = 39.00, df = 2, $p < .01$

being able to do their job. The control subjects were more undecided about changing their jobs while the experimental subjects tended significantly to worry sometimes about their jobs.

Financial Status

Table 16 shows that the experimental and control groups were fairly

TABLE 16. EXPERIMENTAL AND CONTROL POPULATIONS COMPARED BY TOTAL INCOME (PRE-R1)

Income	Experimental (n-70)	Control (n-70)	Both groups (n-140)
$4,000 but under $6,000	29%	22%	25%
6,000 but under 8,000	46	56	50
8,000 and over	23	21	22
No information	3	1	2
Totals	101	100	99

Chi-square = 1.43, df = 2, $p > .05$

well matched on the income variable. Neither was there a significant difference in the proportions of subjects who had income in addition to what they earned on their jobs (see Table 17).

TABLE 17. STUDY POPULATIONS COMPARED ON THE BASIS OF OTHER INCOME (PRE-R1)

Other income	Experimental (n-70)	Control (n-70)	Both groups (n-140)
Yes	37%	33%	35%
No	61	67	64
No information	1		
Totals	99	100	99

Chi-square = .17, df = 2, $p > .05$

Questions were asked of each subject to index his attitude toward his present income while working, his present standard of living, and his future income after retirement. Responses are presented in Table 18.

TABLE 18. ATTITUDES OF STUDY POPULATIONS TOWARD PRESENT AND FUTURE INCOME (PRE-R1)

Attitudes toward income	Experimental (n-70)	Control (n-70)	Both groups (n-140)
Adequacy of income while working[a]			
Income enough to meet living expenses	86%	94%	90%
Income not enough to meet expenses	13	6	9
No information	1		1
Totals	100	100	100
Frequency of worry about money matters[b]			
Often	4%	3%	4%
Sometimes	27	13	20
Hardly ever	69	84	76
Totals	100	100	,100
Standard of living[c]			
Better today	3%	6%	4%
Same as it was	20	14	17
Better during most of lifetime	77	80	79
Totals	100	100	100
Adequacy of retirement income (anticipated)[d]			
Will run a little in the red	6%	3%	4%
Will barely break even	21	17	19
Will be able to meet living expenses	61	47	54
Will have more than enough to meet expenses	11	33	22
Totals	99	100	99

[a] Chi-square = 1.42, df = 1, $p > .05$
[b] Chi-square = 4.90, df = 2, $p > .05$
[c] Chi-square = 1.37, df = 2, $p > .05$
[d] Chi-square = 9.57, df = 3, $p < .02$

There was considerable correspondence between experimental and control subjects in their estimate of the adequacy of their income while working, the frequency of worry over money matters and their appraisal of their standard of living. Most subjects reported that they had enough to meet living expenses, that they hardly ever worried about money matters, and that their standard of living was better than it had been most of their lifetime.

On the other hand, Table 18 shows that a significantly larger percentage of control than experimental subjects expected to have more than enough retirement income to meet expenses.

In sum, before retirement experimental and control subjects were well matched on such variables as marital status, race, birthplace, educational status, residential status except for plans to move, attitudes toward the job, income, attitudes toward income, worry over money matters and attitude toward standard of living. The two groups were significantly different, however, on such other variables as age, plans to move, health status and occupational status, a situation which should be taken into account in the analysis of program effects.

Comparability of Study Groups One Year After Retirement

One hundred and forty was the maximum number of subjects (70 experimental and 70 control) for whom data were available for both the first (Pre-R1) and second (R-1) phases of the study. The previous section compared the 70 experimental and 70 control subjects one year before retirement. In this section the same subjects are compared on the basis of data collected during the first year after retirement. Of course, characteristics such as race, year completed in school, birthplace could not have changed while characteristics such as age would have changed uniformly. Hence, only those characteristics which could have changed during the period of one year following retirement are examined in Table 19 on the following page.

The study groups appear to have become better matched during the first year of retirement, especially in regard to the health variables. The two groups became less comparable, however, in the extent of worry over money matters. The control subjects tended one year after retirement to be less worried about money.

Comparability of Study Samples Two Years After Retirement

The previous two sections were concerned with the comparability of the experimental and control populations at the pre-retirement phase of the study and again at the time of the first retirement interview 6 to 12 months after retirement. However, by the time the second and final interview was conducted 18 to 24 months after retirement, 18 subjects had been lost to the study. The purpose of this section of the report is to assess what effect, if any, the loss of these subjects had on the comparability of the study groups two years after retirement.

TABLE 19. A SUMMARY OF STATISTICAL COMPARISONS OF EXPERIMENTAL AND CONTROL SUBJECTS ONE YEAR AFTER RETIREMENT (R-1)[a]

Characteristics	Results of chi-square comparisons of experimental and control subjects[b]	
	Chi-square values	df
Marital status	.43	2
Residential status		
Home ownership	.11	1
Plans to move	.42	2
Health status		
Self-rating of health	.55	2
Worry over health	2.40	3
Changes in health	.39	2
Present health problems	.76	2
Financial status		
Income	6.00	6
Earning money	.00	1
Adequacy of income	.00	1
Worry over money matters	8.69[c]	2
Standard of living	3.20	2

[a] (R-1) indicates that the data were collected during the first year of retirement.
[b] Source tables showing percentages are presented in Appendix 1.
[c] Significant at the .02 level of confidence.

Age Comparisons

At the time of the pre-retirement interview there was a significant difference of 1.5 years in the average age of experimental and control subjects. Table 20 shows at the time of the second and final retirement

TABLE 20. COMPARISON OF EXPERIMENTAL AND CONTROL POPULATIONS ON THE BASIS OF AGE (R-2)[a]

Age comparisons[b]	Experimental (n-63)	Control (n-59)	Both groups (n-122)
55 - 59 years	2%	14%	8%
60 - 64	64	65	64
65 - 69	35	22	28
Totals	101	101	100
Mean age	63.5	62.2	62.9

[a] (R-2) indicates data were collected during the second and final retirement interview 18 to 24 months after retirement.
[b] $t = 2.88$, $df = 120$, $p < .01$

interview (R-2) that the difference had decreased to 1.3 years, indicating that the age compositions of the study populations, although significantly different, had remained relatively stable despite the loss of 18 subjects.

Marital Status

At the time of the second retirement interview the study populations were still well matched on the basis of marital status (see Table 21).

TABLE 21. COMPARISON OF EXPERIMENTAL AND CONTROL SUBJECTS ON THE BASIS OF MARITAL STATUS (R-2)

Marital status	Experimental (n-63)	Control (n-59)	Both groups (n-122)
Never married	10%	8%	9%
Married, living with spouse	83	83	83
Separated, widowed, divorced	8	9	9
Totals	101	100	101

Chi-square = .05, df = 2, $p > .05$

Race

As shown in Table 22 the two study populations were similarly well matched on the basis of racial composition.

TABLE 22. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF RACE (R-2)

Race	Experimental (n-63)	Control (n-59)	Both groups (n-122)
Negro	30%	19%	25%
White	70	81	75
Totals	100	100	100

Chi-square = 2.18, df = 1, $p > .05$

Birthplace

At R-2 there were no significant differences between experimental and control subjects in regard to birthplace or the language spoken in the country where subjects were born (see Table 23 on the next page).

TABLE 23. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF BIRTHPLACE AND LANGUAGE SPOKEN AT PLACE OF BIRTH (R-2)

Birthplace and language spoken at place of birth	Experimental (n-63)	Control (n-59)	Both groups (n-122)
Birthplace[a]			
In the United States	51%	69%	60%
In a foreign country	47	30	39
No information	2		1
Totals	100	99	100
Language spoken at place of birth[b]			
English	68%	79%	74%
Non-English	30	20	25
No information	2		1
Totals	100	99	100

[a] Chi-square = 3.33, df = 1, $p > .05$
[b] Chi-square = 1.19, df = 1, $p > .05$

Educational Status

A comparison of Table 24 and Table 8 in the previous section shows

TABLE 24. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED BY EDUCATIONAL STATUS (R-2)

Educational status	Experimental (n-63)	Control (n-59)	Both groups (n-122)
Number of school grades completed[a]			
Elementary school (0-8)	71%	68%	70%
High school (9-12)	20	27	22
College (13-16)	8	4	6
No information	2	2	2
Totals	101	101	100
Average number of grades	8.3	7.6	7.9
Other schooling[b]			
Yes	27%	32%	30%
No	70	68	69
No information	3		2
Totals	100	100	101
Difficulty reading and writing English[c]			
No trouble	62%	83%	72%
Very little trouble	19	5	12
Some trouble	14	8	11
A lot of trouble	5	3	4
Totals	100	99	99
Ability to read or write another language[d]			
Yes	33%	34%	34%
No	67	66	66
Totals	100	100	100

[a] t = 1.41, df = 118, $p > .05$
[b] Chi-square = .10, df = 1, $p > .05$
[c] Chi-square = 7.76, df = 3, $p > .05$
[d] Chi-square = .00

that the study populations are as well matched on the educational variables at the time of the R-2 interview as they were when interviewed prior to retirement. Educational status was described in both instances in terms of the number of school grades completed and whether subjects had other schooling, had difficulty reading and writing English and had the ability to read and write another language.

Residential Status

Table 25 compared the study populations on the basis of home ownership, problems with the home, plans to move, and years lived in the neighborhood. None of the observed differences in regard to these variables is significant.

TABLE 25. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED BY HOME OWNERSHIP, PROBLEMS WITH HOME AND PLANS TO MOVE (R-2)

Residential status	Experimental (n-63)	Control (n-59)	Both groups (n-122)
Home ownership[a]			
Owns home	84%	83%	84%
Rents home or other arrangements	14	17	16
No information	2		1
Totals	100	100	101
Problems with home[b]			
No problems	71%	80%	75%
One or more problems	29	20	24
Totals	100	100	99
Plans to move[c]			
Yes	8%	7%	7%
No	87	86	87
Undecided	5	7	6
Totals	100	100	100
Median number of years lived in neighborhood[d]	20.4	22.1	21.3

[a] Chi-square = .01, df = 1, $p > .05$

[b] Chi-square = .71, df = 1, $p > .05$

[c] Chi-square = .02, df = 1, $p > .05$ Subjects who were undecided were not included.

[d] $t = .70$, df = 119, $p > .05$

Health Status

Table 26 shows that there was considerable correspondence in the health status of experimental and control subjects as indexed during the second year after retirement by a self-rating of health, extent of worry over health, recent changes in health and number of present physical or health problems. (see Table 26 on following page).

TABLE 26. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED BY HEALTH STATUS (R-2)

Health status	Experimental (n-63)	Control (n-59)	Both groups (n-122)
Self-rating of health[a]			
Poor	7%		3%
Fair	30	41%	35
Good	63	59	61
Totals	100	100	99
Extent of worry over health[b]			
Often	5%	3%	4%
Sometimes	13	3	8
Hardly ever	16	14	15
Never	65	80	72
No information	2		1
Totals	101	100	100
Recent change in health[c]			
No change	76%	83%	80%
Changed for better	14	10	12
Changed for worse	10	7	8
Totals	100	100	100
Number of present physical or health problems[d]			
0	62%	54%	58%
1	24	31	27
2	13	10	12
3	2	5	3
Totals	101	100	100

[a] Chi-square = 4.79, df = 2, $p > .05$

[b] Chi-square = 2.41, df = 1, $p > .05$ "Often" combined with "sometimes" and "hardly ever" combined with "never."

[c] Chi-square = .88, df = 2, $p > .05$

[d] Chi-square = .83, df = 2, $p > .05$ Subjects having 2 & 3 problems combined.

Financial Status

The financial status of experimental and control subjects was compared on the basis of total income, adequacy of retirement income whether or not subjects were working and earning money in retirement, worry over money matters and the subjects' estimate of their standard of living.

Table 27 shows that control subjects had a higher income than the experimental subjects and that this difference was significant. Nearly half of the control subjects had $5,000 or more income while only 35 per cent of experimental subjects had as much income (see Table 27 on following page).

TABLE 27. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF TOTAL RETIREMENT INCOME (R-2)

Retirement income	Experimental (n-63)	Control (n-59)	Both groups (n-122)
$2,000 but under $3,000	11%		6%
3,000 but under 4,000	22	25%	24
4,000 but under 5,000	27	17	22
5,000 but under 6,000	13	24	18
6,000 but under 7,000	9	5	7
7,000 and more	13	19	16
No information	5	10	7
Totals	100	100	100

[a] Chi-square = 78.46, df = 5, $p < .01$

Despite the difference in income it is shown in Table 28 that there was very little difference in the experimental and control subjects' estimate of the adequacy of their retirement income.

TABLE 28. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED BY ADEQUACY OF RETIREMENT INCOME (R-2)

Adequacy of income	Experimental (n-63)	Control (n-59)	Both groups (n-122)
Adequate for living expenses	92%	86%	89%
Not adequate for living expenses	8	14	11
Totals	100	100	100

Chi-square = .51, df = 1, $p > .05$

Table 29 combines the other three variables which were used to compare the financial status of the study samples. The groups appear to be similar in the extent to which subjects are gainfully employed and the extent of worry over money. The control group differs significantly, however, in the per cent who believed their standard of living was better than it had been (see Table 29 on next page).

Thus, the earlier decision to take income differences into account in the analysis of program effects was reinforced by the data presented in Tables 27 and 29.

TABLE 29. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED BY GAINFUL EMPLOYMENT, WORRY OVER MONEY AND STANDARD OF LIVING (R-2)

Financial status	Experimental (n-63)	Control (n-59)	Both groups (n-122)
Gainfully employed[a]			
Yes	5%	10%	7%
No	95	90	93
Totals	100	100	100
Worry over money[b]			
Often	3%	7%	5%
Sometimes	5	7	6
Hardly ever	6	3	5
Never	86	83	84
Totals	100	100	100
Standard of living[c]			
Better today	24%	29%	26%
Same as it was	70	64	67
Better during most of lifetime	6	5	6
Don't know		2	1
Totals	100	100	100

[a] Chi-square = .63, df = 1, $p > .05$
[b] Chi-square = .51, df = 1, $p > .05$
[c] Chi-square = 9.18, df = 2, $p < .02$ "Don't know" not included.

Summary of Statistical Comparisons

Table 30 summarizes the various statistical comparisons that were made of experimental and control subjects from data gathered at the three phases of the study. A (+) sign should be read as a statistically significant difference between experimental and control subjects, while a (-) sign indicates a non-significant difference. Differences between the study samples was considered to be statistically significant when the probability of their occurrence under the null hypothesis was .05 or less.and not significant if the probability was greater than .05(see p. 44).

In sum, when the experimental and control groups were compared on the basis of 27 different characteristics, it was shown that the groups differed significantly before retirement in respect to health and occupational variables, and the decision was made to take these differences into account in the analysis of program effects. On the other hand, the groups were matched before retirement on nineteen other variables; and the groups appeared to become even more homogeneous at the time of the first and second retirement interviews.

TABLE 30. A SUMMARY OF STATISTICAL COMPARISONS OF STUDY SAMPLES

Individual and socio-economic variables	Results of statistical comparisons[a]		
	Pre-Rl (n-140)	R-1 (n-140)[b]	R-2 (n-122)
Age	+	...[c]	+
Marital status	-	-	-
Race	-	...	-
Birthplace	-	...	-
Language spoken at place of birth	-	...	-
Educational status			
Grades in school completed	-	...	-
Other schooling	-	...	-
Difficulty reading and writing English	-	...	-
Ability to read and write other language	-	...	-
Residential status			
Time lived in community (neighborhood)	-	...	-[d]
Home ownership	-	-	-
Problems with homes	-	...	-
Plans to move	+	-	-
Health status			
Self-rating of health	+	-	-
Worry over health	+	-	-
Recent changes in health	-	-	-
Present health problems	-	-	-
Occupational status			
Occupation	+	...	...
Attitudes toward job	-	...	...
Desire to change job	+	...	...
Worry over job	+	...	...
Financial status			
Income	-	-	+
Other income	-	...	...
Working and earning money in retirement.	...	-	-
Adequacy of income	-	-	-
Worry over money matters	-	+	-
Standard of living	-	-	+
Anticipated adequacy of retirement income	+	...	...
Number of significant differences	8	2	3

---

[a] (+) sign indicates a statistically significant difference while a (-) sign indicates a non-significant difference.

[b] Same subjects as in Pre-Rl.

[c] ... means that no change was possible or that change was identical for all subjects or that the question did not apply.

[d] Time lived in neighborhood.

Hypotheses of the Study

Despite a steady growth in the number and kinds of preretirement education programs during the past twenty years, there has been only minimal effort, as reported in Chapter I, to define objectives and measure effectiveness of the program, and no effort at all as far as could be determined to evaluate the effect of preretirement education during the years after retirement. Thus, the major purpose of the present study was to compare the adjustment during the first two years of retirement of two panels of automobile workers, one of which had participated in a preretirement education program.

Three principal null hypotheses were established as a basis for making the comparisons:

1. that the panel of older workers who participated in the preretirement education programs did not make any different mean scores on a number of measures of adjustment in retirement than a similar group of retired workers who had not been exposed to the preretirement education program;

2. that there were no differences between experimental and control subjects in mean change scores over a period of two years on the various measures of adjustment to retirement; and

3. that there were no differences in mean scores and in mean change scores on the various adjustment measures between various subsamples of the experimental and control study populations such as white and negro subjects, subjects with high and low education, subjects with high and low income, and subjects who were married as against subjects who were not married.

Measures of Personal and Social Adjustment in Retirement

Chapter I of this report discussed the problem not only of defining what is meant by adjustment in the later years but also of finding satisfactory measures with which to study adjustment of older people systematically. Because most students of aging agree that much conceptual work and analysis remains to be done before solutions will be found to these problems, the decision was made to use measures of adjustment to retirement which had already been tested in two outstanding studies of retired people: 1) the Cornell longitudinal study of occupational retirement conducted by Gordon F. Streib and Wayne E. Thompson with a sample of participants living in 48 states,[6] and 2) Bernard Kutner's study of 500 people 60 years of age and older living in New York City.[7] About one-third of Kutner's sample were foreign born. Less than one-half of 1 per cent were non-white. A little less than 30 per cent came from the middle-class while 60 per cent were selected from the lower socioeconomic group--proportions which Kutner believed prevail in almost any large urban center.

The panel of subjects for the Cornell study, on the other hand, consisted of fewer foreign born, a greater representation of professional persons, and fewer people from the lower socioeconomic group. The largest proportions of the Cornell subjects came from the more heavily industrialized areas of New England, Middle Atlantic and North Central states.

Two types of adjustment measures were borrowed from the Cornell and Kutner studies; 1) general type satisfaction with life and morale indexes which were presumed to measure adjustment and 2) measures of one or more specific aspects of adjustment in retirement such as difficulty in getting used to not working or attitude toward income.

One other source, the study of the dynamics of marriage by Robert O. Blood, Jr. and Donald M. Wolfe provided two indexes with which to study changes in the social structure of the older family, a decision-making power index and a division of labor index.[8]

Finally, the investigator developed a number of indexes to measure various aspects of adjustment which will be referred to hereafter as Michigan indexes in contrast with those which will be designated as Cornell, Kutner or Blood and Wolfe indexes.

Table 31 summarizes the 38 indexes which were used in the present

TABLE 31. INFORMATION ABOUT THE BATTERY OF INDEXES USED TO MEASURE GENERAL AND SPECIFIC ASPECTS OF ADJUSTMENT TO RETIREMENT

Number, category and name of index	Source	When administered			Number of items[a]	Scoring system (+ or -)[b]	Description of index[c]
		Pre-R1	R-1	R-2			
General Adjustment Measures							
1 Satisfaction with life	Cornell	X	X	X	3	+	A general assessment of satisfaction, happiness and good spirits which were presumed to measure adjustment

---

[a] Minimum and maximum scores can be read from this column except for indexes 12, 22, 23 because each item of the scale was given a score of 1. Thus scores for the Satisfactions with Life index could range from 0 to 3.

[b] A plus (+) sign indicates that positive responses were given a score of 1 while a (-) sign means that a negative response was given a score of 1. This difference is important in the interpretations of results because a high score is preferred on all measured "positively" scored while a low score is preferred on all measures "negatively" scored.

[c] Items and scored responses for each index are presented in Appendix 2.

TABLE 31 (continued)

Number, category and name of index	Source	When administered			Number of items	Scoring system (+ or -)	Description of index
		Pre-R1	R-1	R-2			
2 Morale	Kutner	X	X	X	7	+	A measure of "morale" in terms of the presence or absence of satisfaction, optimism, and expanding life perspective. "Morale" was used as a criteria of adjustment
3 Adjustment to Retirement	Cornell	X	X	X	2	+	Indexes two aspects of adjustment--the time it takes to get used to retirement and difficulty having things to do in retirement
Self Concept Measures							
4 Self Concept of Age	Cornell	X	X	X	1	+	Indexes how the individual thinks of himself in terms of age
5 Self-Other Comparisons - A	Michigan		X	X	4	+	Measures the older person's view of himself in contrast with other older people in regard to health, standard of living and relatives
6 Self-Other Comparisons - B	Michigan		X	X	6	+	Same as above with two additional comparisons in regard to spouse and children

TABLE 31 (continued)

Number, category and name of index	Source	When administered			Number of items	Scoring system (+ or -)	Description of index
		Pre-R1	R-1	R-2			
7 Attitude Toward Retired People	Michigan	X	X	X	18	+	Indexes whether the individual has a "positive" or "negative" view of older people
Attitudes Toward Retirement Measures							
8 Attitude Toward Retirement	Cornell	X	X	X	1	+	Indexes whether the subject thinks retirement is good or bad
9 Dissatisfaction with Retirement	Cornell	X	X	X	4	-	Dissatisfaction is indexed by attitude toward work
10 Negative Aspects of Retirement	Cornell		X	X	3	-	Measures the effect of retirement on subjects' feelings of usefulness, age, and satisfaction
11 Preparation for Retirement	Michigan	X	X	X	1	+	Measures how well subject thought he was prepared for retirement
Health Measures							
12 Physical Health Index	Kutner		X	X	16	-	A functional type of index based on confinement to bed, deprivation due to illness, number of minor illnesses and number of serious illnesses
13 Health Self-Appraisal	Cornell	X	X	X	5	+	An index of health based on self-rating, changes, existing health problems and care by doctor recently

TABLE 31 (continued)

Number, category and name of index	Source	When administered			Number of items	Scoring system (+ or -)	Description of index
		Pre-R1	R-1	R-2			
14 Attitude Toward Health	Michigan		X	X	5	+	This index asks the subject to compare his health with what it has been, with the health of other older people, and to decide whether old age and sickness are the same thing
15 Worry About Health	Michigan	X	X	X	1	-	Indexes amount of worry over health
16 Mental Health Index	Michigan		X	X	7	-	Worry over health, nervousness, sleeplessness, exhaustion, deep sadness, emotional upsets are used as criteria of poor mental health
17 Knowledge About Health Resources	Kutner		X	X	1	+	Measures subject's knowledge about one or more local healt resources
18 Disposition to Use Health Resources	Kutner		X	X	4	+	Indexes disposition to use health resources of variou kinds
19 Use of Health Resources	Michigan		X	X	5	+	Indexes actual use of a variety of health resources
Financial Measures							
20 Attitude Toward Income	Cornell	X	X	X	3	+	A measure of the subject's ability t meet expenses, the extent of his worry over money matters and his view of his standard of living

TABLE 31 (continued)

Number, category and name of index	Source	When administered			Number of items	Scoring system (+ or -)	Description of index
		Pre-R1	R-1	R-2			
21 Money Management	Michigan		X	X	6	+	Index of attitudes and behavior related to money management
Family and Friends Indexes							
22 Family Decision Making	Blood and Wolfe		X	X	10	+	A measure of the balance of power between husband and wife in making important family decisions
23 Family Division of Labor	Blood and Wolfe	X	X	X	8	+	A measure of the division of labor between husband and wife on eight family tasks
24 Marital Relations	Michigan		X	X	7	+	A general measure of compatibility and satisfactions with the marriage partner
25 Marital Companionship	Blood and Wolfe		X	X	4	+	A specific measure of companionship between husband and wife
26 Satisfaction with Children	Michigan		X	X	6	+	An index of feelings toward children and mutual helpfulness
27 Satisfaction with Relations	Michigan		X	X	5	+	Measures feelings toward relatives and mutual helpfulness
28 Satisfaction with Friends	Michigan		X	X	3	+	Measures feelings toward friends
29 Social Deprivation - A	Michigan		X	X	8	-	Measures the extent to which married people feel socially deprived

TABLE 31 (continued)

Number, category and name of index	Source	When administered			Number of items	Scoring system (+ or -)	Description of index
		Pre-R1	R-1	R-2			
30 Social Deprivation - B	Michigan		X	X	5	-	Measures the extent to which single people feel socially deprived
Home and Community Index							
31 Satisfaction with Home and Community	Michigan		X	X	3	+	Measures feelings about home and community
Activity Measures							
32 Total Activities	Michigan	X	X	X	19	+	Measures extent of participation in all types of activities
33 Sedentary Activities	Michigan	X	X	X	8	+	Indexes participation in eight sedentary activities
34 Physical Activity	Michigan	X	X	X	4	+	Indexes participation in activities requiring physical exertion
35 Mass Media	Michigan	X	X	X	4	+	Measures extent of time spent watching TV, listening to radio, going to movies and reading
36 Social Activity - A	Michigan	X	X	X	9	+	Measures participation in social type of activities
37 Social Activity with Family and Friends	Michigan	X	X	X	5	+	Measures extent of social activity with family and friends
38 Individual Activity	Michigan	X	X	X	11	+	Measures extent of solitary activity

study to measure general and specific aspects of adjustment to retirement. The items in each index, method of scoring and other information about the instruments is presented in Appendix 2.

Eight categories of indexes are listed in Table 31, as follows:

1. General adjustment measures
2. Self concept measures
3. Attitudes toward retirement measures
4. Health measures
5. Financial status measures
6. Family and friends indexes
7. Home and community index
8. Activity measures

These same categories will be used as a basis for presenting the findings in the next chapter of the report. Thus, the analysis will proceed from data obtained by the use of general measures of adjustment to data obtained by the use of specific measures of adjustment in various areas of retirement living including health, use of leisure time, social relationships and so forth.

Although there is some apparent overlap, each index was intended to measure a different aspect of adjustment to retirement. For example, there are eight health indexes described in Table 31. The first of these, number 12, is a physical health index developed by Kutner, which, unlike most measures of health in the later years, contains items which assess four important dimensions of health--confinement to bed, deprivations of various kinds due to illness, number and seriousness of illnesses. Number 13 is a self-appraisal of health. Quite often in surveys of older people the point has been made that despite illnesses which may be revealed by medical examination, the important thing is how older people evaluate their own health. Closely related to the older person's appraisal of his own health is the extent to which he worries about his health (index number 15). It was important also to have some measure of the older subject's mental health (see index number 16).

Finally, one of the major purposes of this study was to examine not only how older people feel about their health but also what they did about it. Considerable emphasis was placed in the preretirement education program on individual responsibility for becoming informed about health services he could use in retirement to prevent illness and to maintain good health and for taking specific steps on his own to achieve better health through regular physical examinations, adequate diet, proper care of the body, exercise, and so forth. Discussion was purposefully directed toward encouraging members of the group to make decisions about their health and then to carry them out. Hence the inclusion of index numbers 17, 18 and 19 which measure in that order the older person's knowledge about health services, his disposition to use them and the extent to which he did actually use health services of which he was aware.

The problem of making a clear-cut presentation of data obtained with the use of as many as 38 different indexes, at three different points in time, for experimental and control groups, as well as a number of sub-groups of experimental and control subjects, is a complicated one. Under these circumstances, it is possible in this report to present only the basic kinds of comparisons, leaving more complex analyses of variables to subsequent reports. However, before turning to the section on data analysis, a brief summary of the steps taken in the over-all conduct of the study seems indicated, especially the methods that were used to develop and conduct the preretirement education program.

Organizational Procedures

As stated earlier, a preliminary study was made for purposes of designing preretirement education materials and methods especially for hourly-rated workers and testing them with groups of automobile workers and their wives. Thus, the present longitudinal study was an extension of the earlier study and it used materials, methods, and measurement techniques similar to those of the earlier study. For example, Table 31 shows that 19 out of the 38 scales and indexes were administered to subjects of the preliminary study. One of the first tasks in making plans for this longitudinal study was therefore one of deciding how best to supplement the original battery of indexes with others, which would permit a more intensive analysis of adjustment in several areas of retirement living. As indicated, some of these indexes were borrowed from other research studies while others were developed by the investigator. Having made final decisions about the measuring instruments to be used a questionnaire was devised for interviewing subjects one year after retirement and again two years after retirement. Following field trials of the questionnaire with fifteen workers who were employed in an automobile assembly plant in Flint, Michigan, the questionnaire was revised and made ready for the study. Soon thereafter, training sessions were conducted for a corps of 6 interviewers, who were hand-picked as the most experienced from a group of interviewers assigned to periodic health studies conducted by another University department. Also, during the initial phase of the longitudinal study, coding work on the questionnaire was started, and a series of interviews with a number of local union leaders were initiated to make arrangements for conducting a new series of preretirement education programs with their members, or for inviting their members to serve as new control subjects.

The same procedures were used to invite the new cohorts of experimental or control subjects as were described earlier in the discussion of the preliminary program. Unions were selected which represented hourly-rated workers in assembly type automobile plants. The possibility of interchange between experimental and control was eliminated to the extent possible and a series of mass meetings of older workers was conducted at the local union hall at which time workers who planned to retire within the period of the study were invited to participate. Those who wanted to participate but whose retirement date was several years away were told that they could participate in a preretirement education program offered by the local union following completion of the research program.

The old and the new experimental subjects, who together made up the longitudinal panel of experimental subjects, were interviewed prior to their participation in the program and again upon completion of the program. Similarly, the old control subjects were interviewed twice, once upon entry into the project and again just prior to the completion of the project. The new control subjects, however, were interviewed only once. Thus, old and new subjects who became part of the longitudinal study population had all been interviewed within the year prior to their retirement. This was called the (Pre-R1) interview. Two subsequent interviews were conducted with all subjects, one 6 to 12 months after retirement, called the (R-1) interview, and the other 18 to 24 months after retirement, called the (R-2) interview.

The Preretirement Education Program

The origins of the preretirement education program used in this research as well as adaptations which were made from time to time to accommodate special groups of older adults including manual workers and their wives have been described in Chapter I. Similarly, Chapter I contains a summary of group discussion principles upon which the program was based. Our purpose here is to outline the principles underlying each of the discussion meetings and to summarize the techniques that were used to encourage participants to discuss their expectations and concerns about many aspects of retirement and to make decisions about their living in retirement.

The program consisted of ten weekly sessions held in the evening for two and one half hours for groups of workers and their wives. The groups ranged in size from 20 to 30 participants including the wives and in one or two instances an adult daughter or son of the worker. Workers must have attended seven of the ten sessions in order to be included as experimental subjects. This did not create as great a problem as expected, because there was very little attrition following the second session except for sickness or death.

Previous research on the needs and problems of older people, and experience in offering older people preretirement education and other programs made it possible to predict to some extent what it was the workers and their wives would consider important aspects of retirement for discussion, and, accordingly, reading and visual materials were prepared ahead of time to reflect the expected concerns and interests. On the other hand, it was recognized that individuals might differ in their recognition of some problems, and especially in their readiness to discuss them. For this and other reasons, the first meeting was a crucial one for purposes of establishing the content of the various sessions. In this regard, participants and the leader shared in making decisions about content of the program--participants on the basis of needs they were willing and ready to talk about, and the leader on the basis of needs he had heard expressed in previous discussion programs for older people.

The two and one half hours devoted to each session was never enough time in which to talk out all aspects of an issue, problem or plan of action. Neither were ten sessions adequate in which to cover everything of interest to participants. The position was taken that unanswered questions or incomplete plans would stimulate the participants to think and to make decisions between one session and the next and following completion of the program. There was evidence that the 25 hours spent in the group discussion were, as a matter of fact, amplified many times as workers, their wives, or other relatives and friends talked over the ideas that had been generated through discussion. Some of this "extra" time spent preparing for retirement was prompted by husbands, wives, relatives or friends reading and discussing the "preparation for retirement" booklets and short stories which were made available to everyone in the program. Nevertheless, the time was all too short in which to do more than initiate the process and hopefully the habit of thinking through retirement situations and of weighing as carefully as possible the various alternatives. This point was made clear in the first session. The point was also made clear that the leader was not expected to have all of the answers. This was difficult for some participants to accept because in their view a "professor" at the University ought to be able to tell them all the answers. It was also difficult at first for many of the participants to share responsibility for the discussion with the leader and to discipline themselves in order to give others equal opportunity to participate.

In sum, the first session of the preretirement education program was concerned with the following specific objectives:

1. Creating a permissive atmosphere in which participants felt welcome, at ease, and able to discuss their concerns.

2. Enabling participants to make decisions about the content of the program.

3. Encouraging participants to get acquainted with each other and the leader.

4. Encouraging participants to accept the need for shared responsibility in group discussion, responsibility for preparation before the meeting, and responsibility for the actual conduct of the meeting.

5. Initiating the maximum interaction in terms of ideas, information, attitudes and ways of doing things.

6. Practicing the process of decision making in the group.

7. Encouraging older people to develop a positive frame of reference in regard to aging and retirement, and to create meaningful roles for retirement living.

8. Creating anticipation for future sessions, and the desire to continue the process of preparing for retirement between sessions by reading, discussion, observation and self-analysis.

Beginning with the second session the program consisted of seven meetings in which specific issues were discussed and a final session devoted especially to a review of plans and to socialization among the members. Here, then, is a brief statement of the principles which guided the conduct of each of those sessions.

Work and Retirement Issues

The second session was devoted to the meaning of work and retirement in our modern industrial society not only because the issues involved are central to any understanding of the retirement process but also because it gave the opportunity to discuss a positive view of retirement and its potentials. Moreover, experience in discussion programs indicates the need for a "warm-up" period of at least two sessions in which participants have the opportunity to sit back, observe, make estimates of each other, get better acquainted and practice participation in a discussion setting. As might be expected automobile workers and their wives did not usually suggest the topic of work and retirement, at least in gerontological terms. On the other hand, they rarely failed to enter into the discussion of a comparison of work and retirement with considerable interest. A film, still pictures and a short essay on the subject were used to prompt discussion. One of the most effective techniques was that of having retired automobile workers and their wives tell what it meant to be retired. The wife's account of her husband's attempt at adjustment, his tendency at first to get in the way usually brought forth a good deal of humor. More importantly, participants learned from hearing about realistic life experiences of people they could understand. Thus what could have been a rather gloomy gerontological recitation of all the problems of retirement and old age usually turned into an exciting encounter with retirement in real life. Of course the responsibility of the discussion leader for choosing positive models in this and other sessions is self-evident.

By this time it will have occurred to most readers that the leadership role in this program was something more than calling together a group of people and asking: "Now what would you like to talk about?" In this instance it was the leader rather than the participant who suggested a discussion of the meaning of work and retirement, and he took the initiative to call on retired people to talk about their experiences. The first program showed the value of the discussion of work and retirement, and it was continued in all subsequent programs.

Income Issues

As might be expected the participants always suggested that the program should include a discussion of the sources and amounts of retirement income, and usually for "strategic" reasons this discussion occurred during the first half of the program. It will be recalled that participants came to the program by way of attendance in a mass meeting called by their local union on the questions of retirement, social security, and pension benefits.

Every effort was made to give participants an opportunity to make an accurate estimate of their retirement income. Company and union personnel were on hand to help compute pension benefits and a social security resource person attended to answer questions. Follow-up investigation was encouraged with these as well as other resource people including the worker's banker and insurance agent because there was never enough time in one session to investigate all possible circumstances. It was especially important to have company, union and social security personnel go out of their way to encourage the participants to contact them personally if they had further questions.

This session like the one on legal issues depended to a larger extent than the others on the presentation of a good many facts using the lecture method. In addition forms were handed out and a beginning made on computing pension benefits. Other printed materials were handed out to explain pension and social security benefits.

Money-Management Issues

There was the need not only of knowing how much income would be available for retirement from various sources but also how much it was going to cost to live, and if there wasn't enough money to go around, what could be done about it. The money-management discussion was purposefully scheduled far enough in advance to give participants the opportunity to keep an exact record for one month of all expenditures. Usually a third of the participants decided to keep records and this experience was adequate for purposes of comparing expenditures before and after retirement.

The main object of the discussion was to move those participants who were worried, concerned and feeling helpless to a position of recognizing certain practical steps which could be taken including family budgeting. Retired couples were often called in to tell how they had managed financially.

Some of the participants expressed a desire to find gainful employment after retirement because they anticipated the need to supplement their regular retirement income, but also because they wanted to work for the sake of doing something useful. When more than a half-dozen were interested in employment, time was found to discuss what it means for an older person to look for a job, what kinds of jobs are available, and how to approach an employer. Participants pointed out that it had been a long time since they "had pounded the pavements" looking for work. It was suggested that those others who did not express an interest in the topic might take a cue from retired workers who sometimes return to work temporarily in order to buy a new stove, a car or to carpet the living room.

Physical Health Issue

To be effective this session needs to involve people who can speak with authority on questions of health such as a physician, a registered nurse and a dietician. When a physician participates it is suggested he discuss the meaning of symptoms, rules for good health, rehabilitation procedures, a positive philosophy of potential health, and, especially the individual's responsibility for maintaining his own health rather than give a medical school type lecture on the various diseases of older people.

Another important consideration in any discussion of the physical health issue is the reluctance of many people to seek out medical attention, not only when they are sick, but also when they are well.

The style of this particular discussion owes a great deal to Dr. Edwin Smith, Associate Professor of Physical Medicine, University of Michigan, who served as a resource person in the experimental programs, prepared the written essay on health which participants read ahead of time, and advised on the preparation of the film which was used with this discussion.

But probably the most important goal of this discussion is that of helping older people recognize that aging is a normal process which serves a useful biological purpose; that old age and sickness are not one and the same, and that much can be done by the individual and the health professions working together to insure a healthy old age.

Mental Health Issues

The point of view was taken that stress, strain, frustration and uncertainty are common feelings of people especially at times of major physical and social change, but that the measure of a mentally healthy person was the manner by which he accepted responsibility for his own future and did something about it.

What are the basic needs of people? What happens when needs are not satisfied? Is it possible to anticipate our needs in the later years and to make decisions which in the long run will enhance our adjustment to people and our environment? How would we characterize older people we know who have made a success of retirement living? Films, short storeis, still pictures, mental health and retired resource persons, and discussion itself were intended to help participants find answers to issues of these sorts. Moreover, there was great value to talking these things over in a group setting. There was obvious lessening of anxiety in some cases when it was recognized that mental health concerns were common among all members of the group.

Finally, changing mental capacities were discussed and potential for maintaining them at a maximum functional level in the later years. In this regard, it is of interest that several of the workers touched off the discussion of mental health in terms of the loss of memory in old age.

Issues of Family, Friends and Living Arrangements

The mutually supportive behavior of husband and wife, relatives and friends was emphasized as a crucial element in any attempt to achieve good adjustment in old age. Accordingly, the idea that we are "social beings" who require interaction with and the support of other people to realize our full potential at all stages of the life cycle including the retirement stage was discussed at length as well as those factors in the later years which mitigate against mutually satisfying social relationships. Individual responsibility for trying to understand the attitudes of children, the need to live one's own life, but at the same time to accept help when it is needed, and the desirability of sustaining or even expanding onds social life space were concepts which were fed into the discussion by the leader and others and reacted to by the participants.

The questions of where to live in retirement were discussed first of all in terms of the changing needs of people from 60 to 90 and secondly in terms of a place to live, having to be something more than a roof over one's head. Living with one's children, living in a home for the aged and living alone were given special attention. Participants were urged to observe first hand as many types of housing for older people as possible. Check lists, essays and short stories were made available to help identify the important considerations when moving to a new location, or living with children, in a home for the aged or alone.

The most valuable techniques for stimulating discussion of where to live in retirement was that of asking two couples in the group with different plans to present their viewpoints and plans to the group for review and discussion.

Legal Issues

When older people in the preretirement education programs were asked to identify questions of a legal nature, fifteen to twenty different questions were frequently expressed which the leader put on the blackboard. Despite this apparent concern the first reactions of Professor Richard Wellman of the University of Michigan Law School, who developed materials and served as resource person for this particular discussion, was under no circumstances should the discussion of legal affairs take the place of seeking actual legal counsel on an individual basis.

With this injunction in mind what was covered were such questions as: What happens if a person does not have a will? What is the difference between an executor and administrator? Is it a good idea for the individual to make his own will? What does one need to know about joint ownership of property? What is the function of the probate court? How does one locate a reputable lawyer? What does a lawyer need to know to make a good will?

In this session more than almost any of the others, participants had much misinformation about wills, lawyers, the probate process, what a person can and cannot do with his property. For this and the other reasons given it was mandatory to have a lawyer on hand to inform and monitor the discussion, especially one who was familiar with wills and probate procedures.

Issues on the Use of Free Time

The position was taken that the essential starting point for any discussion of the use of free time was the individual's felt needs. Some of these needs are common to many people while others are specific to particular individuals.

Once individuals expressed such needs as the need to be useful, to be mentally alert in their later years, to have friends who cared what happened to them, and to be financially secure it became possible to discuss solutions. Many techniques were used to highlight the alternatives: retired people told about their use of time, a librarian brought reading materials to the meeting and discussed the resources of the public library, an adult educator presented opportunities to learn in the community, a YMCA director presented his program, a scout leader encouraged the men to volunteer their skills, a city recreation director discussed the range of possibilities throughout the community, members of an activitiy center for older people gave first hand experience, and so forth.

Two techniques for learning about alternate ways to satisfy personal needs for activity stand out as more effective than any of the others: 1) participants were encouraged to visit various opportunities for retirement activity, including opportunities to render volunteer service and to report to the class on their findings and 2) participants planned and conducted a "show and tell" kind of exhibit of their interests, activities, hobbies, or skills as part of the session on activity or the final summary session of the project. Actually in a group of 20 manual workers and their wives, it was not unusual to find a wide range of activities and interests some of which waited for expression until more time was available. Most of the men were working six days a week and some overtime each day at the time of the program. It was easy to understand, therefore, why frequently their first reaction to the questions of free time was that they were eager to have more of it in which they would have to do nothing. This hurdle was usually overcome by asking participants to put on the blackboard what they thought a typical weekday in retirement would look like and testing the contents of a typical day against needs of the individuals in the group.

Issues in the Utilization of Community Resources

The responsibility for adjustment in retirement should be shared by the individual and the community in which he lives.[9] For this reason every effort was made to maximize contacts between the older workers in the program and leaders of community programs and services of special value to older people. It is axiomatic in the first place that the present generation of older people are not as aware of community resources as tomorrow's generation of older people will be and today'd older people sometimes have misgivings about using what community resources exist.

Two approaches were tested. One approach considered resources at that session when it was appropriate to do so while the other approach was having an entire session devoted to all kinds of community resources--health, recreation, financial, housing, education, employment, counseling and religions. The conclusion was reached that it was more meaningful to use the former approach, i.e., to discuss the health resources during the discussion of health.

The Final Session

Although certain things can be expected to happen at the final session, it, like the first sessions, requires careful planning by the leader. Participants like to talk about their participation in the program and to tell what it meant to them. Almost without fail participants will say they are sorry the program is ending, and sometimes they take the initiative and make plans to continue relationships with others in the group after the meetings. Also participants frequently express their pleasure on having made new friends in the program.

Thus the final session should be planned to achieve several purposes: 1) to reinforce decisions which participants have made in reference to retirement living 2) to make it possible for participants to express their feelings about the program and the participants in it and 3) to encourage participants to continue their preparation for retirement.

In sum, the purpose of these short summaries was to convey the concepts and principles which guided the leadership in the conduct of the preretirement education programs, and at the same time to give a feeling for what it was like for the participants and the leader to become involved in the discussions. Issues were the focal point for discussion. Many of the issues were presented by the older workers; others were presented by resource persons or the discussion leader. In this regard, it was stated that the leaders shared responsibility for insuring that the maximum number of retirement issues came under scrutiny. It follows that leadership no matter how skilled it may be in group discussion techniques must have the additional skill of recognizing or presenting issues which are peculiar to older people about to retire. Not only must the leader know the issues, he must be in firm grasp of many alternative solutions. For this reason one of the outgrowths of the present research at the University of Michigan has been a major move in the direction of training leaders to conduct preretirement education programs.

References

10/7 1. Hunter, W. W. 1965. Preretirement education for hourly-rated workers. Ann Arbor: The University of Michigan, Division of Gerontology. (Mimeographed) ord on h?

10/7 2. Hunter, W. W. 1968. Preparation for retirement. Ann Arbor: The University of Michigan, Division of Gerontology. ord on H?

3. Films may be rented or purchased by writing to the Audio-Visual Education Center, The University of Michigan, 416 Fourth Street, Ann Arbor, Michigan.

4. Hunter, W. W. (In Press) Thematic pictures of older people. Ann Arbor: The University of Michigan, Division of Gerontology.

10/7 5. Hunter, W. W. (In Press) Leader's guide for preretirement education. Ann Arbor: The University of Michigan, Division of Gerontology. ord

6. Thompson, W. E. 1958. Preretirement anticipation and adjustment in retirement. J. Social Issues, 14, no. 2, 35-45.

7. Kutner, Bernard, Fanshel, D., Togo, Alice M., and Langner, T. S. 1956. Five hundred over sixty. New York: Russell Sage Foundation.

8. Blood, R. O., Jr. and Wolfe, D. M. 1960. Husbands and wives--the dynamics of married living. Glencoe, Illinois: The Free Press.

9. Hunter, W. W. 1967. Cooperation between industry, labor and the community in retirement education. Int. Review of Community Development, N.S. 17-18, pp. 103-118.

III. FINDINGS OF THE STUDY

The present study was an attempt to explore the effects of participation in a preretirement education program on the adjustment in retirement of automobile workers living in the Detroit Metropolitan Area. The criteria used to measure adjustment to retirement were of two kinds: 1) mean scores on general indexes of morale, satisfaction with life, self-other concepts and attitudes toward retirement and 2) mean scores on a number of indexes which were presumed to measure adaptive behavior in specific areas of retirement living such as the health, financial and family areas.

Methods of Analysis

Mean scores on the various indexes were computed from data which were collected from the experimental and control panel of subjects at three times, once during the months prior to retirement, a second time 6 to 12 months after retirement and a third time 18 to 24 months after retirement.

A test was applied to the mean scores for each of the three periods in order to test the null hypothesis that there were no differences in the mean scores of experimental and control subjects. In regard to this and the other statistical tests of significance which were used in the study, the null hypothesis was rejected if observed differences were significant at the .05 or greater level, and in these cases where experimental subjects had significantly larger mean scores it was concluded that the differences were due to their participation in the preretirement education program.[a]

The formula which was used to test the differences between mean scores is as follows:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\left(\frac{\Sigma(X_1 - \overline{X}_1)^2 + \Sigma(X_2 - \overline{X}_2)^2}{N_1 + N_2 - 2}\right) \cdot \left(\frac{1}{N_1} + \frac{1}{N_2}\right)}}$$

degrees of freedom = $N_1 + N_2 - 2$

Following the analysis of mean scores a test was applied to the mean change scores of experimental and control subjects on each of the indexes and for each of the three periods of the study. The null hypothesis which was tested in this instance was that there were no differences in mean change scores of experimental and control subjects on the various indexes. The formula which was used to make the test follows on the next page.

---

[a] It will be recalled in a few instances that a significantly smaller mean score was in the desired direction.

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

where X's = change scores

σ_1^2 = variance of change scores

Z is a normally distributed variable

Finally the experimental and the control populations were divided into six sub-groups based on race, language spoken in country of birth, years of school completed, income and occupation. Here the objective was to test the null hypothesis that the differences between experimental and control subjects on mean scores and on mean change scores were equal for each sub-group. The formula which was used in this instance is as follows:

$$Z = \frac{(\bar{X}_1 - \bar{X}_2) - (\bar{X}_3 - \bar{X}_4)}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2} + \frac{S_3^2}{N_3} + \frac{S_4^2}{N_4}}}$$

where $\bar{X}$'s = mean score or mean change score, S^2 = variance of the score or change score, Z is a normally distributed variable, and for example where $\bar{X}_1$ = mean scores of white experimental subjects, $\bar{X}_2$ = mean scores of white control subjects, $\bar{X}_3$ = mean scores of Negro experimental subjects, and $\bar{X}_4$ = mean scores of Negro control subjects.

The Analysis of Mean Scores

The mean scores for the three indexes which were used as general criteria for adjustment before and after retirement are presented in Table 32 on the following page. Before retirement control subjects achieved higher mean scores on each of the measures and in one instance (morale) the difference in favor of the control subjects was significant at the .01 level. The data for each of the indexes also indicate that despite differences before retirement, the two groups differed very little by the end of the first or the second year.

Table 32 also shows that both experimental and control subjects declined in satisfaction with life and in morale by the end of the first year, but that this decline was reversed by the end of the second year. Apparently, for these subjects retirement had the immediate effect of reducing adjustment, but adjustment also appears to have improved as time went on.

Whereas the satisfaction with life and morale scales were intended to index overall adjustment, the adjustment to retirement index presented

TABLE 32. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF MEAN SCORES ON GENERAL ADJUSTMENT MEASURES

No.[a]	General adjustment measures	Mean scores			t value	Sig.
		Experimental[b]	Control[b]	M_E-M_C[c]		
1	Satisfaction with Life (Positive score: 0-3)					
	Pre-R1	2.23	2.43	-.20	1.38	
	R-1	1.54	1.54	-.00	.00	
	R-2	1.57	1.64	-.07	.60	
2	Morale (Positive score: 0-7)					
	Pre-R1	4.23	4.90	-.67	2.73	.01
	R-1	3.79	3.99	-.20	.92	
	R-2	3.86	3.93	-.07	.34	
3	Adjustment to Retirement (Positive score: 0-2)					
	Pre-R1	1.00	1.23	-.23	1.57	
	R-1	1.59	1.60	-.01	.14	
	R-2	1.71	1.71	.00	.00	

[a] For further information about measures see Table 31 and Appendix 2.

[b] The numbers of experimental and control subjects at the three phases of the study presented in this and the other tables in this section are as follows:

Phase	Experimental	Control	Total
Pre-R1	70	70	140
R-1	70	70	140
R-2	63	59	122

[c] In this and in subsequent tables M_E-M_C should be read "mean score of experimental subjects minus the mean score of the control subjects."

in Table 32 measures two specific aspects of adjustment to retirement--the time it takes to get used to not working and the problem of keeping occupied in retirement. It appears before retirement that both groups had some misgiving about these particular aspects of retirement, but that after retirement the problems of not working and of keeping occupied were not as difficult to solve as had been anticipated.

In Table 33 on the following page, as in Table 32, the reader will observe that nearly all of the differences between the mean scores of experimental and control subjects are negative, meaning, of course, that control subjects had higher mean scores than experimental subjects. Two of the differences in favor of the control subjects were significant at the .05 level.

Self-concept of age as measured by the question "How do you think of yourself as far as age goes--middle-aged, elderly, old or what?" appears to have remained fairly constant during the first two years of

TABLE 33. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF MEAN SCORES ON SELF-CONCEPT MEASURES

No.	Self-concept measures	Mean score			t	
		Experimental	Control	M_E-M_C	value	Sig.
4	Self-Concept of Age (Positive score: 0-1)					
	Pre-R1	.66	.76	-.10	1.29	
	R-1	.71	.68	+.03	.40	
	R-2	.70	.73	-.03	.37	
5	Self-Other Comparisons--A (All subjects; positive score: 0-4)					
	R-1	1.64	1.91	-.27	1.41	
	R-2	1.24	1.54	-.30	1.72	
6	Self-Other Comparisons--B (Married subjects only; positive score: 0-6)					
	R-1	2.34	2.90	-.56	2.10	.05
	R-2	1.44	1.61	-.17	.85	
7	Attitude Toward Retired People (Positive score: 0-13)					
	Pre-R1	10.19	12.00	-1.81	2.37	.05
	R-1	11.16	12.14	- .53	.89	
	R-2	11.40	11.83	- .43	.62	

retirement. On the other, hand, all subjects as well as only those subjects who were married showed decreasing mean scores on the Self-Other indexes numbers 5 and 6 which asked the subject to declare whether when compared with other older people he knew he felt advantaged or disadvantaged in regard to several basic aspects of living including health, standard of living, and relationships with family and friends.

Subjects' attitudes toward retired people in general were indexed by measure number 7 in Table 33. The attitude of experimental subjects improved over the two-year period while that of the control subjects did not improve. Change scores will be examined in later analysis to test whether this difference was significant.

Table 34 contains mean scores in the four remaining general type indexes used in this study. A preparation for retirement index asked subjects before and after retirement how well prepared they were for retirement. Their responses indicate that after retirement they thought of themselves as better prepared than before retirement. This is interesting because only in retirement could one test his state of readiness against reality.(see Table 34 on following page).

At all three stages of the study experimental subjects thought of themselves as being better prepared for retirement than control subjects. Similarly, before and after retirement the attitude of experimental subjects toward retirement was better than that of control subjects as measured

TABLE 34. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF MEAN SCORES ON ATTITUDE TOWARD RETIREMENT MEASURES

No.	Attitude toward retirement measures	Mean scores				
		Experimental	Control	M_E-M_C	value	Sig.
8	Preparation for Retirement (Positive score: 0-1)					
	Pre-R1	.80	.70	+.10	1.36	
	R-1 (recall)	.90	.89	+.01	.27	
	R-2 (recall)	.95	.88	+.07	1.40	
9	Attitude Toward Retirement (Positive score: 0-1)					
	Pre-R1	.93	.87	+.06	1.12	
	R-1	.93	.89	+.04	.34	
	R-2	.98	.90	+.08	1.99	.05
10	Dissatisfaction with Retirement (Negative score: 0-4)					
	Pre-R1	1.37	1.04	+.33	1.96	
	R-1	.71	.76	-.05	.34	
	R-2	.44	.64	-.20	1.52	
11	Negative Aspects of Retirement (Negative score: 0-3)					
	R-1	.30	.26	+.04	.44	
	R-2	.19	.20	-.01	.12	

by the question: "Some people say that retirement is good for a person, some say it is bad. In general what do you think?" In fact, two years after retirement there was a significant difference in favor of experimental subjects.

Attitude toward retirement measures numbers 10 and 11 are the first in the series of indexes to be scored "negatively," that is, where a small rather than a large score is in the desired direction. For example, experimental subjects achieved lower mean scores on dissatisfaction with retirement during both retirement interviews.

On the following page Table 35 summarizes the findings for the first eleven general type measures of adjustment to retirement.

In all except the attitude toward retirement index it appears the first null hypothesis of the study was not disproved. The remainder of this section will examine results for the several measures of adjustment in specific areas.

TABLE 35. SUMMARY OF MEAN SCORE DIFFERENCES ON ELEVEN GENERAL INDEXES

Category and number of index	Scoring system (+ or -)	Sign of (M_E-M_C)			Significant differences in favor of:	
		Pre-R1	R-1	R-2	Exp.	Cont.
Morale and Life Satisfaction						
1 (Satisfaction with Life)	+	-	-	-		
2 (Morale)	+	-	-	-		
3 (Adjustment to Retirement)	+	-	-	-		.01
Self-Concepts						
4 (Self-Concept of Age)	+	-	+	-		
5 (Self-Concepts of All Subjects)	+	a	-	-		
6 (Self-Concepts of Married Subjects)	+	a	-	-		.05
7 (Attitudes Toward Retired People)	+	-	-	-		.05
Attitudes Toward Retirement						
8 (Preparation for Retirement)	+	+	+	+		
9 (Attitude Toward Retirement)	+	+	+	+	.05	
10 (Dissatisfaction with Retirement)	-	+	-	-		
11 (Negative Aspects of Retirement)	-	a	+	-		

[a] Not ascertained.

Comparison of Mean Scores on Specific Adjustment Measures

Table 36 (see following page) compares mean scores for experimental and control subjects on the various health measures. The differences in mean scores (M_E-M_C) were in the expected direction in 6 out of the 18 measures. At Pre-R1 the control subjects were significantly less worried over their health while R-1 experimental subjects were significantly more knowledgeable about health resources. Otherwise, these data do not disprove the first null hypothesis.

TABLE 36. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF MEAN SCORES ON HEALTH MEASURES

No.	Health measures	Mean scores			t	Sig.
		Experimental	Control	M_E-M_C	value	
12	Physical Health Index (Negative score: 0-16)					
	R-1	1.96	1.43	+.53	1.56	
	R-2	1.21	1.10	+.11	.29	
13	Self-Appriasal of Health (Positive score: 0-4)					
	Pre-R1	2.29	2.44	-.15	.82	
	R-1	2.43	2.43	.00	.00	
	R-2	2.17	2.29	-.12	.83	
14	Attitude Toward Health (Positive score: 0-5)					
	R-1	3.81	3.77	+.04	.21	
	R-2	3.17	3.22	-.05	.24	
15	Worry Over Health (Negative score: 0-1)					
	Pre-R1	.54	.30	+.24	2.96	.01
	R-1	.23	.20	+.03	.41	
	R-2	.17	.07	+.10	1.81	
16	Mental Health Index (Negative score: 0-7)					
	R-1	1.77	1.47	+.30	1.30	
	R-2	1.48	1.14	+.34	1.24	
17	Knowledge About Health Resources (Positive score: 0-1)					
	R-1	.40	.23	+.17	2.19	.05
	R-2	.25	.19	+.06	.89	
18	Disposition to Use Health Resources (Positive score: 0-4)					
	R-1	3.01	2.81	+.20	1.32	
	R-2	3.11	3.02	+.09	.53	
19	Use of Health Resources (Positive score: 0-5)					
	R-1	3.79	3.67	+.12	.57	
	R-2	3.68	3.83	-.15	.73	

The data in Table 37 on the next page indicate that experimental subjects tended to achieve in time higher mean scores on measures of attitude toward income and money management. Whether or not the trend is a significant one will be examined in the succeeding section of the report.

TABLE 37. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF MEAN SCORES ON FINANCIAL MEASURES

No.	Financial measures	Mean scores			t value	Sig.
		Exp.	Cont.	M_E-M_C		
20	Attitude Toward Income (Positive score: 0-3)					
	Pre-R1	2.43	2.73	-.30	2.46	.02
	R-1	2.63	2.76	-.13	1.24	
	R-2	2.76	2.68	+.08	.66	
21	Money Management (Positive score: 0-6)					
	R-1	2.41	2.24	+.19	1.28	
	R-2	1.41	1.37	+.04	.36	

Mean scores on social relationships with spouse, children, relatives and friends, as well as feelings of social deprivation, are presented in Table 38. The data show that in 7 out of the first 10 mean score

TABLE 38. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF MEAN SCORES ON FAMILY AND FRIENDS MEASURES

No.	Family and friends measures	Mean scores			t value	Sig.
		Exp.	Cont.	M_E-M_C		
24	Marital Relations (Positive score: 0-7)					
	R-1	4.27	4.64	-.37	1.00	
	R-2	3.78	3.68	+.10	.30	
25	Companionship in Marriage (Positive score: 0-4)					
	R-1	2.50	2.53	-.03	.13	
	R-2	2.62	2.47	+.15	.58	
26	Satisfaction with Children (Positive score: 0-6)					
	R-1	2.74	2.69	+.05	.18	
	R-2	2.29	2.07	+.22	.82	
27	Satisfaction with Relatives (Positive score: 0-5)					
	R-1	2.31	2.19	+.12	.55	
	R-2	1.90	1.85	+.05	.32	
28	Satisfaction with Friends (Positive score: 0-3)					
	R-1	1.39	1.36	+.03	.21	
	R-2	1.19	1.27	-.08	.69	
29	Social Deprivation Index A (Married; Negative score: 0-8)					
	R-1	1.84	1.93	-.09	.39	
	R-2	1.25	1.54	-.29	1.20	
30	Social Deprivation Index B (Not married; Negative score: 0-5)					
	R-1	1.46	1.51	-.05	.31	
	R-2	.94	1.19	-.25	1.23	

differences, experimental subjects had a higher score than the control subjects, and also that experimental subjects felt less social deprivation one year and two years after retirement. But, no one of the differences was significant at the .05 level of confidence. In addition to the above measures, family adjustment data which explore changes in family decision making and division of labor are presented at the end of this chapter.

Mean scores on two series of indexes remain to be examined. Table 39 shows that there was a marked decline in the extent of satisfaction with home and community, but, unfortunately, the data were so combined that it is not possible to tell whether it was the home, the community, or both which figured in the decline in satisfaction.

TABLE 39. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF MEAN SCORES ON A HOME AND COMMUNITY MEASURE

No.	Home and community measure	Mean scores			t value	Sig.
		Experimental	Control	M_E-M_C		
31	Satisfaction with Home and Community	(Positive score: 0-3)				
	R-1	1.60	1.44	+.16	1.02	
	R-2	.79	.93	-.14	1.09	

Patterns of Activity

The final series of data, which will be examined in order to test the first null hypothesis, is presented in Table 40 on the following page. Subjects were asked to declare, in regard to approximately 20 activities of all kinds, whether they engaged in each of them "often", "sometimes", "hardly ever" or "never". The subject must have reported that he engaged in the activity "often" in order to be scored plus one on the index.

As indicated earlier, there was considerable discussion among the experimental subjects in the preretirement education programs of the value of purposeful activity as a means toward achieving satisfactory adjustment to retirement. The need to rest and relax was judged to be equally important in order to restore physical strength and a sense of well-being. Reading books, magazines and newspapers, attending plays and movies, watching television, and listening to the radio were considered to be effective means for learning, keeping up with the times, identifying important social issues in our society or for appreciating the arts. Activity with other people including spouse, members of the family, friends, co-learners and co-workers was given priority. The desirability of engaging in a variety of activities is reflected in the various indexes shown in Table 40.

TABLE 40. EXPERIMENTAL AND CONTROL SUBJECTS COMPARED ON THE BASIS OF MEAN SCORES ON ACTIVITY MEASURES

No.	Activity measures	Mean scores			t value	Sig.
		Experimental	Control	M_E-M_C		
32	Total Activity Index (Positive score: 0-19)					
	Pre-R1	6.91	7.99	-1.08	1.91	
	R-1	8.33	8.01	+ .32	.61	
	R-2	8.98	8.49	+ .49	.92	
33	Sedentary Activity Index)Positive score: 0-8)					
	Pre-R1	2.89	3.07	- .18	.67	
	R-1	3.08	3.16	- .08	.26	
	R-2	2.68	3.41	+ .27	1.05	
34	Physical Activity Index (Positive score: 0-4)					
	Pre-R1	1.96	2.01	- .05	.31	
	R-1	2.18	2.29	- .11	.60	
	R-2	2.33	2.41	- .08	.37	
35	Mass Media Activity Index (Positive score: 0-4)					
	Pre-R1	1.31	1.71	- .40	2.39	.02
	R-1	1.50	1.78	- .28	1.57	
	R-2	2.10	2.00	+ .10	.58	
36	Social Activity Index A					
	Pre-R1	3.11	3.77	- .66	1.92	
	R-1	4.01	3.51	+ .50	1.64	
	R-2	4.03	3.66	+ .37	1.05	
37	Activity with Family and Friends (Positive score: 0-5)					
	Pre-R1	2.10	2.66	- .56	2.21	.05
	R-1	2.51	2.25	+ .26	1.13	
	R-2	2.60	2.39	+ .21	.84	
38	Individual Activity Index (Positive score: 0-11)					
	Pre-R1	3.97	4.47	+ .50	1.46	
	R-1	4.44	4.63	+ .19	.57	
	R-2	5.13	4.98	+ .15	.44	

The mean score of experimental subjects exceeded those of the control subjects in half of the instances. In two of the remaining cases, control subjects had significantly higher mean scores. Thus, it appears that the null hypothesis, with reference to each of these measures, was not disproved.

It is, nonetheless, of interest that when mean scores are compared from Pre-R1 to R-1 to R-2 both experimental and control subjects, except in one case (Social Activity Index A) appear to have undertaken more activity as time went on in retirement.

Summary of the Analysis of Mean Scores

In sum, an extensive assessment of attitudes and behavior failed to produce conclusive evidence that there was a significant difference between the experimental and control subjects in patterns of general or of specific adjustment to retirement. As a matter of fact, inspection of the tables in this section will show that experimental subjects achieved greater mean scores exactly half of the time, a result that could have occurred by chance.

Analysis of Mean Change Scores

The findings presented in the previous section did not make it possible to reject the first null hypothesis. However, it is axiomatic that acceptance of the null hypothesis did not prove there were no differences between the experimental and control subjects. As a matter of fact, inspection of the data from one testing period to another revealed the probability of a number of differences of a longitudinal kind between the two groups.

It was decided therefore, to test the null hypothesis that there was no difference between experimental and control subjects between mean change scores. Table 41 (see page 74) summarizes these findings for 18 of the scales and indexes which were administered at the three phases of the study.

The data in Table 41 suggest that the mean change scores of experimental subjects were significantly different from the mean change scores of control subjects on the following measures of adjustment:

10. Dissatisfaction with Retirement--experimental subjects became less dissatisfied with retirement than control subjects.

15. Worry over Health--experimental subjects became less worried over health than did the control subjects.

32. Total Activities--experimental subjects became more involved in all types of activity than did control subjects.

36 and 37. Social Activity--experimental subjects became more involved in social activity including social activity with family and friends than did control subjects.

It is presumed that these are important gains to have been made as a result of participation in the preretirement education program.

TABLE 41. TESTS OF SIGNIFICANCE OF THE DIFFERENCES IN MEAN CHANGE SCORES ON EIGHTEEN INDEXES WHICH WERE ADMINISTERED DURING THE YEAR PRIOR TO RETIREMENT, THE YEAR AFTER AND TWO YEARS AFTER RETIREMENT[a]

Category, number and name of measures	Pre-R1 to R-1[b]		Pre-R1 to R-2[c]		R-1 to R-2[d]	
	Z	Sig.	Z	Sig.	Z	Sig.
General Adjustment Measures						
1 Satisfaction with Life	1.30		.11		1.38	
2 Morale	1.74	.10	1.57		.00	
3 Adjustment to Retirement	1.41		.89		.20	
Self-Concept Measures						
4 Self-Concept of Age	.71		.27		.02	
7 Attitude Toward Retired People	1.61		.91		.45	
Attitudes Toward Retirement						
8 Preparation for Retirement	.91		.11		1.13	
9 Attitude Toward Retirement	.26		.38		.27	
10 Dissatisfaction with Retirement	2.20	.05	2.24	.05	.86	
Health Measures						
13 Self-appraisal of Health	.82		.19		.89	
15 Worry over Health	2.32	.05	1.13		1.48	
Financial Measure						
20 Attitude Toward Income	1.36		2.28	.05	1.41	
Activity Measures						
32 Total Activities	2.34	.05	2.27	.05	.38	
33 Sedentary Activities	1.49		2.10	.05	1.03	
34 Physical Activity	.26		.18		.05	
35 Mass Media Activity	1.17		2.42	.05	1.57	
36 Social Activity A	2.68	.01	2.26	.05	.03	
37 Activity with Family and Friends	2.63	.01	2.37	.05	.10	
38 Individual Activity	.148		1.66		.64	

[a] A (Z) value of 2.58 is significant at the .01 level, 1.96 at the .05 level, and 1.64 at the .10 level. Only those differences which were significant at the .05 or greater level were considered significant for this study. On the other hand those differences which were significant at the .10 level or at approximately the .10 level are of interest because they indicate differences in the desired direction.

[b] See Table 55, Appendix 1.

[c] See Table 56, Appendix 1.

[d] See Table 57, Appendix 1.

In addition, the comparison of change scores from Pre-R1 to R-1 on the general adjustment measures, although not statistically significant at the .05 level, suggest that experimental subjects tended to score better on these indexes as well.

The results of the tests of mean change scores for the period Pre-R1 to R-2 indicate that four of the first-year gains among experimental subjects persisted into the second year of retirement and that experimental subjects added a new gain by virtue of their larger scores on attitude toward income. On the other hand, differences in favor of experimental subjects on the two activity indexes, number 36 and 37 became less marked.

Table 42 presents similar results for the other 18 scales or indexes which were only administered one year and two years after retirement.

TABLE 42. TESTS OF SIGNIFICANCE OF THE DIFFERENCES IN MEAN CHANGE SCORES ON EIGHTEEN INDEXES WHICH WERE ONLY ADMINISTERED DURING THE YEAR AFTER RETIREMENT AND AGAIN TWO YEARS AFTER RETIREMENT

Category, number and name of measures[a]	R-1 to R-2[b]	
	Z value	Sig.[c]
Self-Concept Measures		
5 Self-Other Comparisons A	.05	
6 Self-Other Comparisons B (Married)	1.44	
Attitudes Toward Retirement		
11 Negative Aspects of Retirement	.23	
Health Measures		
12 Physical Health Index	1.07	
14 Attitude Toward Health	.54	
16 Mental Health Index	.51	
17 Knowledge About Health Resources	1.40	
18 Disposition to Use Health Resources	.37	
19 Use of Health Resources	.77	
Money Management		
21 Money Management	.80	
Family and Friends and Living Arrangements		
24 Marital Relations	1.50	
25 Companionship in Marriage	.97	
26 Satisfaction with Children	.76	
27 Satisfaction with Relatives	.29	
28 Satisfaction with Friends	.77	
29 Social Deprivation A (Married)	.54	
30 Social Deprivation B (Not married)	.83	
31 Satisfaction with Home and Community	1.72	

[a] The other two indexes which were administered at R-1 and R-2--the Decision Making Power Index and the Family Division of Labor Index--were discussed in the preceeding section.

[b] See footnote (a) to Table 41.

[c] There were no differences significant at the .05 or greater level.

Tables 41 and 42 show that there were no differences in mean change scores of any significance during the period R-1 to R-2.

To summarize, an analysis of mean change scores disclosed significant differences between the experimental and control subjects and some of those differences persisted into the second year of retirement. Thus it was possible to reject the null hypothesis and to credit the preretirement education program with having facilitated the adjustment of experimental subjects as measured by these particular indexes.

The Adjustment of Sub-Groups of Older People

To explore the possibility that the preretirement education program had different effects on different kinds of automobile workers, data were analyzed to test the null hypothesis that there were no differences in mean scores between six sub-groups of the experimental and control population on 23 measures of adjustment in retirement. The sub-groups whose mean scores were compared in this fashion were as follows:

1. White compared with negro subjects.
2. Subjects born in an English speaking country compared with subjects who were born in a non-English speaking country.
3. Subjects who were married compared with subjects who were not married.
4. Subjects who completed eight or more grades compared with subjects who completed fewer than eight grades in school.
5. Subjects with $6,000 or more income compared with subjects with less than $6,000 income.
6. Subjects who were engaged in skilled occupations compared with subjects who were engaged in unskilled occupations.

Table 43 on the following page presents significant differences in mean scores from among 414 tests which were computed on the basis of six sub-groups and 23 indexes (results for all 414 tests are presented in Tables 58 to 63 in Appendix 1). The results in Table 43 for all the sub-group analyses except those based on race and education could have occurred by chance. In regard to the comparisons on the basis of race and education, the results suggest that the program may have been more effective for white subjects and subjects who had more education, and that further study is needed to confirm or reject these possibilities.

TABLE 43. A SUMMARY OF THE EFFECTS OF THE PRERETIREMENT EDUCATION PROGRAM ON VARIOUS SUB-GROUPS OF SUBJECTS AS MEASURED BY MEAN SCORES

Sub-groups of subjects[a] and name of index	Significant Z values[b]		
	Pre-R1	R-1	R-2
White vs. negro			
1 Morale	3.63		
5 Attitude Toward Retirement			2.000
18 Disposition to Use Health Resources			3.138
24 Companionship in Marriage		2.632	
Born in English Speaking Country vs. Born in Non-English Speaking Country			
16 Mental Health Index		2.882	
Married vs. Not Married			
3 Adjustment to Retirement		2.000	
27 Satisfaction with Relations			2.500
Subjects Who Completed 8 Grades vs. Subjects Who Did Not Complete 8 Grades of School			
11 Negative Aspects of Retirement		2.600	
32 Total Activities		2.476	
36 Social Activity		2.159	
$6,000 or More Income vs. Less Than $6,000			
5 Self-Other Comparisons A			2.250
Skilled vs. Unskilled Workers			
(no test was significant)			

[a] Sixty-nine tests were computed for each of the 6 sub-groups, or a total of 414 tests.

[b] For results of all tests see Tables 58 to 63 in Appendix 1. A normally distributed Z = 1.96 at .05 level; 2.58 at .01 level and 3.29 at .001 level of significance.

A number of additional tests were computed on the premise that mean change scores might be a more sensitive measure of differential effect of the program on sub-groups. Table 44 presents only those tests of mean change scores which were significant. In each of the analyses of the sub-group data one could expect two results significant at the .05 level. With this criterion in mind it appears that there was a notable difference in favor of white subjects in money management propensity, and it seems reasonable to conclude that observed differences in dissatisfaction with retirement in favor of white subjects were in fact significant ones.

TABLE 44. A SUMMARY OF EFFECTS OF THE PRERETIREMENT EDUCATION PROGRAM ON VARIOUS SUB GROUPS OF SUBJECTS AS MEASURED BY MEAN CHANGE SCORES

Sub-groups of subjects, reference number and name of index[a]	Significant Z values[b]		
	Pre-R1 to R-1	Pre-R1 to R-2	R-1 to R-2
White Subjects vs. Negro Subjects			
4 Self-Concept of Age			2.179
13 Self-Appraisal of Health	2.124		
21 Money Management			3.317
Subjects Born in English Speaking Country vs. Subjects Born in Non-English Speaking Country			
9 Attitude Toward Retirement	1.987		
10 Dissatisfaction with Retirement	3.432		
12 Physical Health Index			2.847
18 Disposition to Use Health Resources			2.651
Subjects with $6,000 or More Income vs. Subjects with Less Than $6,000 Income			
32 Total Activities	2.316		

[a] Thirty-nine tests were computed for each of the three sub-groups or a total of 117 tests.

[b] For results of all tests see Tables 64 to 66 in Appendix 1. A (Z) value of 1.96 is significant at the .05 level, 2.33 at the .02 level, 2.58 at the .01 level and 3.29 at the .001 level.

Thus the comparison of sub-groups on the basis of mean scores and mean change scores suggest the possibility that race and education are important variables which require further study with automobile and other kinds of manual workers. On the basis of previous studies of retirement[1,2,3] it was presumed that income would have a strong effect on adjustment in retirement. This presumption is not supported by the findings of this study.

Social Structure of the Family in Retirement

Previous investigations[4,5] as well as more informal contacts with older people suggested the possibility that retirement produces change in family social structure. The social structure of a family has been defined by Blood and Wolfe as the positions which the marriage partners occupy in relation to each other.[4] The two most important aspects of family social structure, according to Blood and Wolfe, are the power positions of the members and the division of labor between them. Together the pattern of power and division of labor determine the framework within which the family functions.

Blood and Wolfe define power as the ability of one partner to influence behavior of the other. Power is most clearly revealed in the ability to make decisions affecting the life of the family. The power to make decisions may be divided equally between husband and wife or it may be exercised predominantly by one or the other marriage partner.

The division of labor is revealed by the pattern of roles which marriage partners have developed. Typically, some roles are performed by the wife, others by the husband and some by either husband or wife.

Two indexes were developed by Blood and Wolfe to measure the balance of power between husbands and wives and the division of labor between them. These indexes were adapted for use in the present study to test whether or not family social structure among automobile workers and their wives changes after retirement.

It will be recalled that wives of experimental subjects were encouraged to take part with their husbands in the preretirement education programs because the position was taken not only that husbands and wives should share in the task of making decisions about retirement but that they should be encouraged to develop patterns of retirement activity which were mutually satisfactory. Hence, in using Blood and Wolf's indexes which measured power in decision making and division of labor between husband and wife it was presumed that experimental subjects would in time move more frequently toward a middle position on the indexes than the control subjects. As will be shown, the middle position on the indexes is that position where husbands and wives are equally involved in making decisions or performing a role.

The Power to Make Decisions

Ten decisions were used to index the relative balance of power between automobile workers and their wives, as follows:[a]

1. What car to buy?

2. How much money the family can afford to spend weekly on food?

3. What to have for meals?

4. What repairs to make on the house?

---

[a] Items 1,2,5 and 10 are to be found in the original Blood and Wolfe index. The other items were added for this investigation.

5. Where to go on a trip?

6. Whether to have children or relatives come for a visit?

7. Whether to go to a doctor when someone is sick?

8. What to do for children or relatives?

9. What to do when going out for the evening?

10. Whether the husband should find work to do?

These particular decisions were selected because they applied to all subjects, and they were relatively important decisions. Four of them (no. 1,2,10 and possibly 4) had to do with money decisions; two of them were concerned with family matters (6,8); the use of leisure time was involved in questions number 5 and 9; question number 7 was related to an important health decision while question number 3 on meals reflects a common every day decision which has to be made. Two other criterion were applied to the questions used in the decision making index: 1) the decisions should be important to the lives of both husband and wife, and 2) the list of decisions should include typical feminine and masculine decisions. For example, what to have for meals and whether or not to have relatives come for a visit were presumed to be decisions made predominantly by the wives while what car to buy and whether or not the husband should find work to do were expected to be decisions made primarily by the husband.

The interviewer gave the following instructions prior to reading the ten questions:

> "In every family somebody has to decide such things as where the family will live and so on. Many couples talk such things over first but the final decision often has to be made by the husband or wife. For instance, who makes the final decision about --------? Subjects were asked to select one of five alternatives: 1) wife always, 2) wife more than husband 3) husband and wife exactly the same, 4) husband more than the wife, and 5) husband always.

The workers' responses one year and two years after retirement to the ten questions are shown in Table 45 on the following page. The decisions are arranged in order of decreasing male predominance. Three of the decisions are ones which the husband tends to make more often than the wife (husband working, car, and house repairs). Three other decisions are ones usually made by the wife (food expenditures, visits of relatives, and meals). The remaining decisions (trips, going to doctor, evening out activity and helping out relations) are decisions which husbands and wives tend to share equally. These patterns of decision making are uniform for experimental and control subjects. The prevailing patterns also appear to remain fairly constant in time.

TABLE 45. HUSBAND'S MEAN DECISION MAKING POWER ONE YEAR AND TWO YEARS AFTER RETIREMENT

Score	Who made the decisions?	Decisions[b]	Husband's Mean Power[a]					
			Exp. Families			Cont. Families		
			R-1	R-2	MD[c] R2-R1	R-1	R-2	MD[c] R2-R1
(5)	Husband always	Husband working	4.18	4.52	+.34	3.90	4.35	+.49
(4)	Husband more than wife	Car	4.13	4.40	+.27	3.82	4.07	+.25
		House repairs	4.00	4.51	+.51	4.14	4.45	+.31
(3)	Husband and wife the same	Trips	2.95	3.02	+.07	3.14	3.02	-.12
		Going to doctor	2.89	2.96	+.07	2.66	2.73	+.07
		Evening activity	2.88	2.94	+.06	2.68	3.00	+.32
		Doing for relatives	2.57	2.75	+.00	2.68	2.67	-.01
(2)	Wife more than husband	Food expenditure	2.46	2.69	+.23	2.13	2.35	+.22
		Visits of relatives	2.33	2.76	+.43	2.37	2.69	+.32
(1)	Wife always	Meals	1.61	1.46	-.15	1.67	1.53	-.14
Average of the means			3.00	3.22	+.22	2.92	3.09	+.17

[a] The mean was computed on the basis of weights shown in the left-hand column, e.g., husband always = 5, husband more than wife = 4, and so forth. A mean score of 4 or greater was used to indicate that the decision was made predominantly by the husbands, while a mean score from 1 to 2.5 indicated a decision made predominantly by the wife. Scores in between 2.5 and 4.00 represented a middle position in which husbands and wives made decisions equally.

[b] See Appendix 1 for Tables 50 and 51 showing distribution of scores for each decision.

[c] Mean difference.

However, a close inspection of the data in Table 45 reveals the following trends during the first two years of retirement:

1. The three decisions made most frequently by the husbands became almost completely husband-dominated.

2. The four decisions which tended more than the others to be made equally by husbands and wives tended to become even more equilateral, but this change was due primarily to the husbands becoming more active in making these decisions.

3. Similarly, two of the three wife-dominated decisions moved in the direction of equilateral decision making. In contrast, the decision about what to have for meals became almost completely wife-dominated.

Although change among the experimental subjects was in the expected direction of increased sharing in decision making, similar change took place among the control subjects. Apparently, something more than participating in a preretirement education program produced the changes during the first two years of retirement.

Despite the tendency of retired automobile workers and their wives to share more equally in decision making, data presented in Table 45 reveal the fact that in all decisions except the decision of what to have for meals the gains in power to make decisions were in the direction of greater husband mean power. This suggests that the automobile worker not only reinforced traditional decisions which he made while working but that he tended to "take over" or "share" decisions which previously had been made by the wife. This finding is contrary to the findings of Blood and Wolfe who suggested that the husband's mean power decreased after retirement.[4] Neugarten had similar things to say about subjects in her Kansas City study of older people.[6] One major difference between this study and the one conducted by Blood and Wolfe is that their study was based exclusively on interviews with wives. Thus, it could be that the workers in the present study inflated their decision making power, while the wives in Blood and Wolfe's study deflated their husband's decision making power. A more likely reason for the differences in these results and those of Blood and Wolfe and Neugarten is a difference in the character of the populations studied.

Division of Labor

Among automobile workers, as among people generally, it was presumed that the men were accustomed to doing tasks around the home which required physical strength and technical skill such as mowing the lawn and making repairs while the women did such tasks as cleaning, preparing the meals and washing dishes. To explore whether automobile workers and their wives engaged in traditional activities for men and women, whether the division of labor was different after retirement and whether participation in a preretirement education program made any difference in the division of labor, subjects were asked the following eight questions:

1. Who does the grocery shopping?
2. Who gets breakfast?
3. Who shovels the sidewalk?
4. Who mows the lawn?
5. Who does the evening dishes?
6. Who repairs things around the home?
7. Who straightens up the living room when company is coming?
8. Who keeps track of the money and bills?

Compiled originally for the Blood and Wolfe study of the dynamics of married living these questions were selected because they represent tasks which are common to most families, and theoretically these tasks could be performed by either the husband or the wife. The same scoring system was used to score the division of labor index as was used in scoring the decision making power index, except the weights were reversed giving the wife a score of 5 when she always performed the task (see Table 46). Hence, the division of labor was expressed in terms of the wife's mean task performance.

TABLE 46. THE DIVISION OF LABOR BETWEEN HUSBANDS AND WIVES AS MEASURED BY THE WIFE'S MEAN TASK PERFORMANCE SCORE BEFORE RETIREMENT, ONE YEAR AND TWO YEARS AFTER RETIREMENT

Who performed task?	Task[b]	Wife's mean task performance[a]						Blood and Wolfe study
		Exp. Families			Cont. Families			
		Pre-R1	R-1	R-2	Pre-R1	R-1	R-2	
(5) Wife always	Living room	$\overset{\rightarrow}{4.18}$	→ $\overset{\rightarrow}{4.47}$	$\overset{\rightarrow}{4.53}$	$\overset{\rightarrow}{4.35}$	→ $\overset{\rightarrow}{4.54}$	$\overset{\leftarrow}{4.35}$	4.44
(4) Wife more than husband	Dishes	$\overset{\rightarrow}{3.96}$	→ $\overset{\rightarrow}{4.28}$	$\overset{\leftarrow}{3.75}$	$\overset{\rightarrow}{3.66}$	→ $\overset{\rightarrow}{4.03}$	$\overset{\leftarrow}{3.85}$	4.52
	Breakfast	$\overset{\rightarrow}{3.75}$	→ $\overset{\rightarrow}{4.22}$	$\overset{\leftarrow}{3.52}$	$\overset{\rightarrow}{3.70}$	→ $\overset{\rightarrow}{4.12}$	$\overset{\leftarrow}{3.61}$	4.04
(3) Wife and husband the same	Groceries	$\overset{\rightarrow}{3.18}$	→ $\overset{\rightarrow}{3.50}$	$\overset{\leftarrow}{3.25}$	$\overset{\rightarrow}{3.25}$	→ $\overset{\rightarrow}{3.58}$	$\overset{\leftarrow}{3.06}$	3.72
	Bills	$\overset{\rightarrow}{2.98}$	→ $\overset{\rightarrow}{3.12}$	$\overset{\leftarrow}{3.04}$	$\overset{\rightarrow}{3.44}$	→ $\overset{\rightarrow}{3.45}$	$\overset{\leftarrow}{3.00}$	3.27
(2) Husband more than wife	Walk	$\overset{\rightarrow}{1.37}$	→ $\overset{\rightarrow}{1.57}$	$\overset{\leftarrow}{1.24}$	$\overset{\rightarrow}{1.30}$	→ $\overset{\rightarrow}{1.46}$	$\overset{\leftarrow}{1.24}$	1.81
(1) Husband always	Repairs	$\overset{\leftarrow}{1.31}$	← $\overset{\leftarrow}{1.27}$	$\overset{\leftarrow}{1.10}$	$\overset{\leftarrow}{1.45}$	← $\overset{\leftarrow}{1.42}$	$\overset{\leftarrow}{1.02}$	1.46
	Lawn	$\overset{\rightarrow}{1.29}$	→ $\overset{\rightarrow}{1.53}$	$\overset{\leftarrow}{1.20}$	$\overset{\rightarrow}{1.37}$	→ $\overset{\rightarrow}{1.44}$	$\overset{\leftarrow}{1.13}$	1.71

[a] The mean was computed on the basis of weights shown in the left-hand column, e.g., wife always = 5, wife more than the husband = 4, wife and husband equal = 3, husband more than wife = 2, and husband always = 1.

[b] See Appendix 1 for Tables 52,53, and 54 showing distribution of scores for each task.

When one year after retirement subjects were asked the eight questions they were also asked to recall to what extent one or the other of them performed the task before retirement. The same questions were asked two years after retirement. Thus Table 46 presents division of labor data for the pre- and the post-retirement periods.

Blood and Wolfe's data are presented in the right-hand column of Table 46. Most of the wives in this study clean the living room for company, do the dishes and prepare the breakfast while the husbands shovel the walk, make repairs and mow the lawn. Shopping for groceries and keeping track of the money and bills are tasks shared by husbands and wives though they tend to be done more by wives. Blood and Wolfe concluded that "the pattern of task performance is one of marked specialization. Taken task by task, six of the eight are usually performed in a completely specialized manner."

Generally speaking, our findings conform almost identically task by task with Blood and Wolfe's findings. Automobile workers and their wives apparently are as specialized in their division of labor as is the general population in Detroit.

The reader's attention is directed, however, to the system of arrows which have been superimposed over each set of data to indicate either increased or decreased performance by the wife. Read horizontally the pattern of arrows is in the direction of increased performance by the wife from Pre-R1 to R-1 in every instance except that of making repairs. Generally speaking this means despite the specialization mentioned above that during the first year of retirement the wives did more while husbands did less of all seven tasks. On the other hand, the trend was reversed in all except one of the tasks (cleaning up the living room) during the second year of retirement. Husbands became involved to a larger extent in seven of the eight tasks including washing dishes and preparing the breakfast. It appears, however, that the increased sharing of most of the tasks was a function of forces other than participation in the pre-retirement education program.

To summarize, husbands tended to increase their power to make family decisions after retirement. This finding was contrary to results from other studies which have suggested that women become more powerful as family decision makers during the retirement years. In regard to division of labor husbands tended during the first year of retirement to turn over more of the household tasks to their wives than had been the case before retirement. However, the trend was reversed during the second year of retirement. The data failed to support the hypothesis that experimental subjects tended more than control subjects to share equally with the wives in family decision making and division of labor.

Summary of Findings

To summarize, some 38 different indexes were used to measure general and specific kinds of adjustment and the social structure of the family in retirement. The analysis proceeded through three stages, with the following results:

1. Mean scores and mean change scores were computed on the various indexes for experimental and control subjects from data collected at three times, once during the months just prior to retirement, a second time during the year after

retirement and a third time during the second year of retirement.

2. A t-test was applied in order to test the null hypothesis that there were no differences in the mean scores of experimental and control subjects at each of the three phases of the study. These tests failed to produce conclusive evidence which would reject the null hypothesis.

3. A large sample test was applied to test the null hypothesis that there were no differences in mean change scores of experimental and control subjects from Pre-R1 to R-1, Pre-R1 to R-2 and R-1 to R-2.

   The results of the analysis of mean change scores made it possible to reject the null hypothesis and to credit the preretirement education program with having had a significant effect of reducing dissatisfaction with retirement, of reducing worry over health, and of encouraging participants to engage in all kinds of activities including social activities with family and friends.

   Most of the significant gains by experimental subjects were achieved during the first year of retirement and they tended to persist into the second year of retirement, but at a somewhat diminishing level of significance. Further study is needed to determine whether gains of these sorts persist during the first five years of retirement or whether all subjects, those who participate and those who do not participate in a preretirement program eventually achieve equal levels of adjustment to retirement.

4. The final step in the analysis tested by means of a large sample test the null hypothesis that there were no differences in mean scores or mean change scores of several sub-groups of the experimental and control populations. The question being asked was: Were there any differences in the effects of the program on white compared with negro subjects, on skilled workers compared with unskilled workers, on more educated workers compared with less educated workers, and so forth?

   The results of the tests of mean scores and of mean change scores suggested the possibility that the program was more effective with white subjects and with subjects having the most education. Further study is needed to confirm or reject this hypothesis.

5. The analysis of the social structure of the family in retirement was based on indexes of the power to make family decisions and of the division of labor between husbands and wives in the performance of typical tasks in and around the home. The findings showed during the first two years of retirement that

husbands increased their power to make family decisions. During the first year of retirement, husbands tended to turn over more of the household tasks to their wives than had been the case before retirement. But this trend of the husbands doing less and the wives more of the household tasks was reversed in the second year of retirement. The data failed to support the hypothesis that participation in the preretirement education program resulted in greater sharing by husband and wife in decision making and in performance of household tasks. To the contrary, observed changes among experimental and control subjects were almost identical.

References

1. Thompson, W.E. 1958. Pre-retirement anticipation and adjustment in retirement. J. Social Issues, 14, no.2, 35-45.

2. Tuckman, J. and Lorge, I. 1953. Retirement and the industrial worker. New York: Columbia University, Teachers College, Bureau of Publications.

3. Morgan, J.N., David, M.H., Cohen, Wilbur J., Brazer, H.E. et als. 1962. Income and welfare in the United States. New York: McGraw-Hill Book Company, Inc.

4. Blood, R.O., Jr. and Wolfe, D.M. 1960. Husbands and wives--the dynamics of married living. Glencoe, Illinois: The Free Press.

5. Cumming, Elaine and Henry, W.E. 1961. Growing old: the process of disengagement. New York: Basic Books, Inc.

6. Neugarten, Bernice L. 1956. Kansas City--city of adult life. In Irma Gross (ed.) Potentialities of women in the middle years. East Lansing: Michigan State University Press.

CHAPTER IV. SUMMARY AND IMPLICATIONS FOR FURTHER RESEARCH

Retired people have become a major element in American society, and year after year thousands more join their ranks. As a matter of fact, retired people are being called the new leisure class in America. Some observers view retirement as a waste of human resources, a denial of basic satisfactions which come from being a productive member of society and a precursor of poor health, frustration, dissatisfaction and maladjustment. An entirely different viewpoint underlay the present study--the viewpoint that retirement is a remarkable achievement of modern industrial society, a dividend of 10, 15 or as many as 20 years of living in which adults should have the opportunity if they choose to relinquish the responsibilities of the job and engage in other patterns of living, many of which have been shown to be as useful, as productive and as stimulating as the work pattern of life.

Whether retirement is viewed as desirable or undesirable most observers agree that older people are often poorly prepared to make worthwhile use of the super-abundance of time that is suddenly thrust upon them. For that matter, much the same indictment is made of people of younger ages in our society so many of whom appear unable to utilize free time purposefully. Knowledge, decision and the skill to implement them are what are needed, and it was presumed that the educational process has already proven itself as the means of these important objectives. In any event, the position was taken that adult education has the opportunity and the responsibility to collaborate with an increasingly important segment of our society in the important task of enriching the retirement way of life in America.

Purpose of the Study

The present study, therefore, has attempted to contribute to an understanding of the effectiveness of an education program in the adjustment of automobile workers in retirement. Information-giving, discussion, decision-making and problem-solving in a group setting were the educational techniques used more often than any others to help older people adjust to retirement. Two aspects of adjustment in retirement were investigated--general, over-all adjustment as indexed by satisfaction with life and morale measures and specific adjustment to retirement as measured by attitudes and behavior in relation to such areas of everyday living as the use of leisure time, family and other social relationships, money management and maintenance of health. The effect of a preretirement education program on the temporal as well as the qualitative aspects of adjustment in retirement was investigated.

Selection of Subjects

This was the first time as far as could be determined that the attempt was made to study longitudinally the effects of preretirement education. It was also determined that the use of a control group in the study of preretirement education has been limited to one other study.

A previous investigation of the immediate effects of preretirement education conducted by the author made available two panels of subjects one of which had participated in a preretirement education program. The experimental and control panels consisted of 36 and 52 subjects respectively. It was anticipated that as many as one-third of these subjects would be lost during the two-year period of a longitudinal study. Thus one of the first steps in the present study was to offer programs to 49 new experimental subjects and their wives; and, 37 new control subjects were added to the 52 old control subjects. The new subjects were motivated to volunteer for the research project in exactly the same manner as in the earlier study, new experimental subjects participated in the same preretirement education program conducted by the same discussion leader, and equal care was exercised to reduce to the minimum opportunity for experimental and control subjects to interact with one another. By definition, only male hourly-rated workers, who were employed in assembly type automobile plants, who lived in the Detroit Metropolitan Area, and who had made plans to retire within the stated period of the study were eligible to take part either as experimental or control subjects. Interested workers who were denied the opportunity to take part in a program were told one would be offered to them once the research project was completed. This was one of the conditions which labor unions said must be met if they were to help the project by identifying potential subjects and encouraging them to participate.

Considerable credit is due to the United Automobile Workers International Union and to several UAW local unions for their help. The UAW local union was the only avenue open to the investigator for contacting large numbers of manual workers who were about to retire. Even so, the local unions usually did not know the age or the expected date of retirement of their members. These deficiencies were over-shadowed, however, by the fact that the local union had the capacity as did no other organization including the University to bring out large numbers of older members to orientation meetings and to encourage them to cooperate in the research project.

Subjects who volunteered to participate in the research project were led to expect personal benefits from participation, but also they were told that they were making a contribution to the well being of other industrial workers who some day would be following in their footsteps. The methodological position was taken that the study was best made with volunteers because, in fact, future programs were likely to be offered on a volunteer basis. Many subjects decided not to participate in the project, but unfortunately a study of those who refused to participate was not conducted.

Since it was not feasible to determine arbitrarily the composition of the experimental and control groups except to control on certain variables through rules of eligibility, it was important to obtain as much information as possible about each subject in order to assess the comparability of the experimental and control groups at three stages in the study: the year before retirement, and one and two years after retirement. The need frequently to refer to these phases resulted in their designation as the Pre-Rl, the R-1 and the R-2 phases of the study.

Comparability of the Study Groups

Experimental and control subjects were compared at each of the three study phases on the basis of age, marital status, race, birthplace, language spoken at place of birth, educational status, residential status, health status, occupational status and financial status.

To summarize, before retirement experimental and control subjects were matched on such variables as marital status, race, birthplace, educational status, residential status (except plans to move) income, worry over money matters and attitude toward standard of living. On the other hand, control subjects were significantly younger, healthier, and more skilled as workmen than experimental subjects.

The degree of homogeneity of the experimental and control groups which was observed before retirement was maintained during the first two years of retirement despite the fact that 18 subjects were lost between the second and third phases of the study. Furthermore after retirement the health status of the two groups became more homogeneous.

Hypotheses of the Study

Three principal null hypotheses were established as a basis for comparing the adjustment of the two panels of automobile workers one of which had participated in a preretirement education program:

1. that there were no differences in the mean scores of experimental and control subjects on various measures of adjustment,

2. that there were no differences in the mean change scores on various measures of adjustment of experimental and control subjects over three periods of time, Pre-Rl to R-1, Pre-Rl to R-2 and R-1 to R-2, and,

3. that there were no differences in the mean scores and the mean change scores on various adjustment measures of several sub-groups of the experimental and control populations.

Measurement of Adjustment in Retirement

Thirty-eight indexes, some of them borrowed from other studies of retired people and some of them developed especially for the present study, were used to measure various aspects of adjustment in retirement. The indexes grouped themselves into 8 measurement categories:

1. General life satisfaction or morale measures
2. Self- or age-concept measures
3. Measures of attitudes toward retirement
4. Health measures
5. Financial status measures
6. Family and friends indexes
7. Home and community index
8. Activity measures

The eight categories of measures were used as a basis for presenting the findings of the study in terms of patterns of over-all adjustment as well as patterns of adjustment to specific areas of retirement living. The measures also made it possible to study change in attitudes and behavior over a period of time.

The two sources of most of the indexes of adjustment used in the present study - The Cornell Longitudinal Study and the Kutner Study of 500 people living in New York City are recognized among students of aging as the major sources of validated measures of adjustment in retirement. However, the subjects of the present study resembled the Kutner subjects to a larger extent than they did the Cornell subjects. In addition the point must be made that the indexes which were developed by the author especially for the present study have only logical validity. The extent to which they measure what they are thought to measure was not determined objectively except to ask a panel of experts to react to their content, and to administer them to a trial group of automobile workers before using them in the present study.

Statistical Methods

To determine the comparability of experimental and control groups at various stages of the study a chi-square test was used when quantitative data such as race or marital status were involved and a t-test when data were distributed on a continuum such as years of schooling or age.

As a first step in analyzing differences between the study groups mean scores and mean change scores were computed for all indexes, for experimental and control subjects, for six subgroups of experimental and control subjects and for the three periods of the study.

A t-test was used to test observed differences between means, and a large sample test was used to test differences between mean scores and mean change scores of sub-groups. When no statistically significant differences were revealed the groups being compared were considered to be homogeneous in terms of the particular measure under consideration. Observed differences were considered statistically significant when the probability of their occurrence by chance was .05 or less.

Major Findings

From the analysis of mean scores it was observed that experimental subjects had higher mean scores on half of the indexes, but that none of these differences were statistically significant. However, the test of differences between mean change scores made it possible to reject the null hypothesis and to credit the preretirement education program with having had the important effects of:

1. reducing dissatisfaction with retirement
2. reducing worry over health, and,
3. encouraging participants to engage in all kinds of activity including social activity with friends and members of the family.

It appears that most of the statistically significant gains by experimental subjects occurred during the first year of retirement, and that they tended to persist into the second year, but at a somewhat diminishing level of significance.

The analysis of the effects of the preretirement education program on the adjustment in retirement of sub-groups based on race, education, income and so forth suggested the possibility that the program was more effective with white subjects, with subjects who completed 8 or more grades of school, and with subjects who were born in an English-speaking country. Further study is needed to confirm these tentative findings.

The study of the social structure of the family in retirement as indexed by measures of the power to make family decisions and division of labor in the performance of tasks in and about the home showed that husbands increased their power to make decisions during the first two years of retirement. This finding is contrary to the commonly accepted one that retirement from the work role tends to diminish the power of the husband and increase the power of the wife.

During the first year of retirement, husbands tended to do less and wives to do more of ten typical tasks in and around the house. It is almost as though the husbands had decided to relax and do less around the house after retirement. The trend of husbands doing less was reversed, however, during the second year when husbands and wives tended to share tasks more like they did before retirement. Two possible explanations are that wives prompted their husbands to take more responsibility for household tasks or that husbands reached the point where they needed more things to do with their free time.

A hypothesis which was being tested was that after retirement experimental subjects to a significantly larger extent than control subjects would tend to share decision-making and the performance of tasks about the home. The findings failed to support the hypothesis thereby suggesting the possibility that forces stronger than the preretirement education program were at work among the automobile families.

Limitations of the Study and Suggestions for Future Research

The most obvious limitations of the study is that it applies only to a particular group of automobile workers living and working in a large midwestern metropolitan community who may or may not be representative of all automobile workers living in the Detroit Metropolitan area. On the other hand, dealing with a homogeneous occupational group is to be preferred to dealing with a mixed occupational group. The fairly obvious need is that of repeating the study with other groups of automobile workers, with other occupational groups and with manual workers living in other regions of the country.

Subjects volunteered for the research and it is quite likely they differ from the automobile workers who refused to take part in the research. In future studies of preretirement education, it is suggested that as much could be learned from a study of those who refuse as those who accept the invitation to enroll in the program.

On the basis of the present study, it was not possible to separate out the value of the group discussion as against the lecture method. Although it was possible to credit the program with some important results, these results are not ones which applied consistently to the several areas of retirement living which were explored. Hence, further study with an emphasis on program methods is urgently needed to test whether the lecture method yields any different results with manual workers. What could have been done in this research, but was not done, was to have added some preretirement education programs using the lecture rather than the group discussion method.

As indicated earlier in the chapter, many of the indexes of adjustment used in the study had only common sense validity. For this and other reasons it is suggested prior to any future research of this kind with manual workers that further attention be given to the systematic development of indexes to measure performance in typical tasks of everyday living in retirement such as money management, socialization with people inside and outside the family, and the development of patterns of daily activity. In this regard further analysis of the data obtained on the thirty-eight different indexes used in the study would be a useful starting point.

Despite the significant gains which experimental subjects made during the two years of the present study, the data suggest that differences between experimental and control subjects were becoming less marked at the end of the second year. Hence there is the important unanswered question of the persistence in retirement of the effects of participation in a preretirement education program. One way to answer this question would be to conduct follow-up interviews with some of these same subjects at regular intervals during the next five years.

Toward the end of the preretirement education programs members usually expressed satisfaction and the wish that the program could continue. Behavior of this kind suggests the possibility of studying the effect of periodic follow-up retirement sessions in which new information would be supplied, unsolved problems discussed, reports of successful adaptations made to the group, and an exprit de corp, and mutual helpfulness encouraged among the members. Also because participants would be retired there would be time in which to encourage them to use the community as a laboratory for learning about housing for the aging, health services, activity programs and so forth. And yet, those who deal with older people in social clubs, church and library groups and activity centers have made very little use of the group setting in which older people come together to solve problems of everyday living.

Hence, education for aging, may have come about full circle. The first course offered in this country for older people was designed to help retired people solve the problems of later maturity. Now it appears the best way to help people adjust to the retirement years may be to provide opportunity for learning before and after retirement.

APPENDIX 1

TABLES

TABLE 47. COMPARISONS OF EXPERIMENTAL AND CONTROL GROUPS ON THE BASIS OF MARITAL STATUS, HOME OWNERSHIP AND PLANS TO MOVE (R-1)

Various characteristics	Experimental (n-70)	Control (n-70)	Both groups (n-140)
Marital status[a]			
Never married	9%	6%	7%
Married, living with spouse	83	86	84
Separated, widowed or divorced	9	8	9
Totals	101	100	100
Home ownership[b]			
Own home	73%	70%	71%
Rented home or other arrangement	25	29	29
No information[c]	1		1
Totals	99	99	101
Plans to move[d]			
Yes	9%	11%	10%
No	76	71	74
Undecided	16	17	16
Totals	101	99	100

[a] Chi-square = .43, df = 2, $p > .05$

[b] Chi-square = .11, df = 1, $p > .05$

[c] No information category not included in Chi-square computations.

[d] Chi-square = .42, df = 2, $p > .05$

TABLE 48. COMPARISONS OF EXPERIMENTAL AND CONTROL GROUPS
ON THE BASIS OF HEALTH STATUS (R-1)

Health status	Experimental (n-70)	Control (n-70)	Both groups (n-140)
Self-rating of health[a]			
Poor	6%	5%	6%
Fair	34	29	31
Good	60	66	63
Totals	100	100	100
Worry over health[b]			
Often	4%	6%	5%
Sometimes	19	14	16
Hardly ever	31	23	27
Never	44	56	50
No information[c]	1	1	1
Totals	99	100	99
Recent change in health[d]			
No change	64%	69%	66%
Change for better	24	20	22
Change for worse	11	11	11
Totals	99	100	99
Present health problems[e]			
No problems	30%	40%	35%
One problem	40	40	40
Two or more problems	30	20	25
Totals	100	100	100

[a] Chi-square = .55, df = 2, $p > .05$

[b] Chi-square = 2.40, df = 3, $p > .05$

[c] No information category not included in Chi-square computations.

[d] Chi-square = .39, df = 2, $p > .05$

[e] Chi-square = .76, df = 2, $p > .05$

TABLE 49. COMPARISONS OF EXPERIMENTAL AND CONTROL GROUPS ON THE BASIS OF FINANCIAL STATUS (R-1)

Financial status	Experimental (n-70)	Control (n-70)	Both groups (n-140)
Income[a]			
$2,000 but under $3,000	9%	3%	6%
3,000 " " 4,000	26	20	23
4,000 " " 5,000	26	26	26
5,000 " " 6,000	16	13	14
6,000 " " 7,000	10	16	13
7,000 " " 8,000	6	10	8
8,000 and over	4	10	7
No information[b]	4	3	4
Totals	101	101	101
Gainfully employed[c]			
Yes	7%	9%	8%
No	93	91	92
Totals	100	100	100
Adequacy of retirement income[d]			
Yes	89%	89%	89%
No	9	10	9
Don't know	3	1	2
Totals	101	100	100
Worry over money matters[e]			
Often	1%	1%	1%
Sometimes	16	3	9
Hardly ever	16	9	12
Never	67	87	77
Totals	100	100	99
Standard of living[f]			
Better today	46%	31%	39%
Same as it was	46	60	53
Better during most of lifetime	7	7	7
No information[b]	1	1	1
Totals	100	99	100

---

[a] Chi-square = 6.00, df = 6, $p > .05$, No information category not included.

[b] No information category not included in Chi-square computations.

[c] Chi-square = .00

[d] Chi-square = .00, "Don't know" not included.

[e] Chi-square = 8.69, df = 2, $p < .02$. "Often" and "Sometimes" combined.

[f] Chi-square = 3.20, df = 2, $p > .05$, No information category not included.

TABLE 50. DISTRIBUTION OF POWER IN DECISION-MAKING AMONG EXPERIMENTAL AND CONTROL FAMILIES ONE YEAR AFTER RETIREMENT

Who made decisions R-1	Decisions[a]									
	Car	Food expenses	Meals	House repairs	Trips	Visits of relatives	Going to doctor	Doing for relatives	Evening-out activity	Husband working
Experimental families										
(1) Wife always	2%	25%	63%	2%	2%	21%	4%	17%	4%	2%
(2) Wife more than husband	4	16	20	2	11	25	11	11	13	4
(3) Husband-wife same	25	52	13	36	82	54	80	70	80	30
(4) Husband more than wife	20	2	5	15	2		4	2		4
(5) Husband always	50	5		45	4		2		4	61
Total percent	101	100	101	100	101	100	101	100	101	101
Husband's mean power	4.13	2.46	1.61	4.00	2.95	2.33	2.89	2.57	2.88	4.18
Control families										
(1) Wife always	9%	45%	60%	5%	4%	30%	15%	18%	15%	5%
(2) Wife more than husband		10	23	2	2	7	12	5	12	5
(3) Husband-wife same	30	38	10	26	79	60	68	70	66	32
(4) Husband more than wife	21		3	9	9	3	2	3	3	12
(5) Husband always	39	7	3	59	7		3	3	3	47
Total percent	99	100	99	101	101	100	100	99	99	101
Husband's mean power	3.82	2.13	1.67	4.14	3.14	2.37	2.66	2.68	2.68	3.90

---

[a] Subjects who failed to answer questions were not included in this tabulation.

TABLE 51. DISTRIBUTION OF POWER IN DECISION-MAKING AMONG EXPERIMENTAL AND CONTROL FAMILIES TWO YEARS AFTER RETIREMENT

Who made decisions R-1	Decisions[a]									
	Car	Food expenses	Meals	House repairs	Trips	Visits of relatives	Going to doctor	Doing for relatives	Evening-out activity	Husband working
Experimental families										
(1) Wife always	2%	24%	75%		4%	10%	4%	10%	2%	2%
(2) Wife more than husband	2	4	10		2	8	6	10	6	6
(3) Husband-wife same	17	59	12	22%	87	80	85	78	90	10
(4) Husband more than wife	12	8	2	6	4		2			4
(5) Husband always	67	6	2	73	4	2	4	2	2	79
Total percent	100	101	101	101	101	100	101	100	100	101
Husband's mean power	4.40	2.69	1.46	4.51	3.02	2.76	2.96	2.75	2.94	4.52
Control families										
(1) Wife always		35%	63%			6%	8%	10%	2%	2%
(2) Wife more than husband	2%	4	20	2%	6%	20	10	12	6	6
(3) Husband-wife same	36	57	16	20	90	71	82	78	85	16
(4) Husband more than wife	14			8		2			2	6
(5) Husband always	48	4		69	4				4	69
Total percent	100	100	99	99	100	99	100	100	99	99
Husband's mean power	4.07	2.35	1.53	4.45	3.02	2.69	2.73	2.67	3.00	4.35

[a] Subjects who failed to answer questions were not included in this tabulation.

TABLE 52. DIVISION OF LABOR BETWEEN HUSBANDS AND WIVES PRIOR TO RETIREMENT

Who performs task Pre-R1	Tasks							
	Groceries	Breakfast	Walk	Lawn	Dishes	Repairs	Living room	Bills
Experimental families								
(1) Husband always	13%	13%	76%	80%	5%	80%	5%	33%
(2) Husband more than wife	5	9	16	16	11	15	4	5
(3) Husband and wife same	50	20	6	2	16	2	14	24
(4) Wife more than husband	16	9	2		18	2	21	7
(5) Wife always	16	50		2	50	2	55	31
Total percent	100	101	100	100	100	101	99	100
Wife's mean task performance	3.18	3.75	1.37	1.29	3.96	1.31	4.18	2.98
Control families								
(1) Husband always	12%	8%	80%	82%	10%	76%	3%	19%
(2) Husband more than wife	3	8	10	6	5	11		3
(3) Husband and wife same	53	28	10	6	32	7	18	32
(4) Wife more than husband	12	15		4	14	2	15	7
(5) Wife always	20	40		2	39	4	63	39
Total percent	100	99	100	100	100	100	99	100
Wife's mean task performance	3.25	3.70	1.30	1.37	3.66	1.45	4.35	3.44

TABLE 53. DIVISION OF LABOR BETWEEN HUSBANDS AND WIVES ONE YEAR AFTER RETIREMENT

Who performs task R-1	Tasks							
	Groceries	Breakfast	Walk	Lawn	Dishes	Repairs	Living room	Bills
Experimental families								
(1) Husband always	7%	9%	70%	75%	7%	82%	4%	33%
(2) Husband more than wife	3	3	15	11	3	13	2	2
(3) Husband and wife same	45	9	7	4	10	4	7	21
(4) Wife more than husband	22	16	2	4	14		19	7
(5) Wife always	22	64	6	6	66	2	68	37
Total percent	99	101	100	100	100	101	100	100
Wife's mean task performance	3.50	4.22	1.57	1.53	4.28	1.27	4.47	3.12
Control families								
(1) Husband always	7%	5%	74%	81%	7%	78%	2%	19%
(2) Husband more than wife	3	7	9	6	3	11		3
(3) Husband and wife same	44	17	13	6	22	5	12	31
(4) Wife more than husband	17	14	4	2	14	2	15	7
(5) Wife always	29	58		6	53	4	71	40
Total percent	100	101	100	101	99	100	100	100
Wife's mean task performance	3.58	4.12	1.46	1.44	4.03	1.42	4.47	3.45

TABLE 54. DIVISION OF LABOR BETWEEN HUSBANDS AND WIVES TWO YEARS AFTER RETIREMENT

Who performs task R-2	Tasks							
	Groceries	Breakfast	Walk	Lawn	Dishes	Repairs	Living room	Bills
Experimental families								
(1) Husband always	10%	17%	89%	91%	15%	94%	4%	24%
(2) Husband more than wife	13		2	2	4	2	2	8
(3) Husband and wife same	42	33	7	4	21	4	8	33
(4) Wife more than husband	12	13			10		10	8
(5) Wife always	23	37	2	2	50		76	27
Total percent	100	100	100	99	100	100	100	100
Wife's mean task performance	3.25	3.52	1.24	1.20	3.75	1.10	4.53	3.04
Control families								
(1) Husband always	12%	14%	84%	91%	13%	98%	2%	24%
(2) Husband more than wife	12	4	9	4	2	2	4	8
(3) Husband and wife same	43	33	4	4	23		16	35
(4) Wife more than husband	22	4	2		13		12	8
(5) Wife always	10	45			50		65	24
Total percent	99	100	99	99	101	100	99	99
Wife's mean task performance	3.06	3.61	1.24	1.13	3.85	1.02	4.35	3.00

TABLE 55. SOURCE DATA FROM WHICH Z VALUES WERE COMPUTED ON 18 INDEXES (Pre-R1 to R-1)

Reference number of measure	Scoring system (+ or -)	Exp. (n-70)		Cont. (n-70)		Z
		Mean difference	Standard deviation	Mean difference	Standard deviation	
1	+	.686	.860	.886	.959	-1.30
2	+	.443	1.630	.914	1.567	-1.74
3	+	- .586	1.014	-.371	.765	-1.41
4	+	- .029	.589	.043	.600	- .71
7	+	-1.429	4.386	-.143	5.054	-1.61
8	+	- .100	.486	-.186	.621	.91
9	+	- .000	.341	-.014	.318	.26
10	-	.657	1.006	.286	.995	2.20
13	+	- .143	1.011	.014	1.234	- .82
15	-	.314	.578	.100	.515	2.32
20	+	- .200	.773	-.029	.722	-1.36
32	+	-1.543	4.169	-.029	3.439	-2.34
33	+	- .400	2.081	.114	2.011	-1.49
34	+	- .300	1.376	-.243	1.209	- .26
35	+	- .257	1.359	.000	1.239	-1.17
36	+	- .829	2.187	.129	2.035	-2.68
37	+	- .386	1.653	.343	1.623	-2.63
38	+	- .671	2.723	-.043	2.281	-1.48

TABLE 56. SOURCE DATA FROM WHICH Z VALUES WERE COMPUTED ON 18 INDEXES (Pre-R1 to R-2)

Reference number of measure	Scoring system (+ or -)	Exp. (n-63)		Cont. (n-59)		Z
		Mean difference	Standard deviation	Mean difference	Standard deviation	
1	+	.730	.723	.711	1.018	.11
2	+	.460	1.389	.898	1.668	-1.57
3	+	- .730	1.050	-.576	.855	- .89
4	+	- .064	.669	-.034	.524	- .27
7	+	- .794	4.978	-.034	4.279	- .91
8	+	- .159	.447	-.170	.592	.11
9	+	- .032	.177	-.051	.344	.38
10	-	.921	1.036	.492	1.073	2.24
13	+	.143	1.134	.186	1.408	- .19
15	-	.333	.508	.237	.429	1.13
20	+	- .286	.851	.034	.694	-2.28
32	+	-1.968	3.797	-.576	2.931	-2.27
33	+	- .794	1.902	-.170	1.354	-2.10
34	+	- .349	1.259	-.390	1.232	.18
35	+	- .714	1.156	-.237	1.023	-2.42
36	+	- .905	2.234	.000	2.181	-2.26
37	+	- .476	1.615	.237	1.705	-2.37
38	+	-1.063	2.177	-.458	1.851	-1.66

TABLE 57. SOURCE DATA FROM WHICH Z VALUES WERE COMPUTED ON THIRTY-SIX SCALES AND INDEXES WHICH WERE ADMINISTERED ONE YEAR AND TWO YEARS AFTER RETIREMENT

Reference number of measure	Scoring system (+ or -)	Exp. (n-63)		Cont. (n-59		Z
		Mean difference	Standard deviation	Mean difference	Standard deviation	
1	+	.000	.622	- .170	.723	1.38
2	+	.016	1.301	.017	1.408	.00
3	+	.127	.684	- .152	.690	.20
4	+	- .032	.595	- .034	.524	.02
5	+	.397	1.185	.407	1.219	- .05
6	+	.873	1.508	1.288	1.672	-1.44
7	+	.540	4.721	.203	3.453	.45
8	+	- .048	.280	.017	.347	-1.13
9	+	- .032	.252	- .017	.347	- .27
10	-	.270	.723	.152	.784	.86
11	-	.111	.599	.085	.677	.23
12	-	.698	2.588	.237	2.144	1.07
13	+	.254	.967	.102	.959	.89
14	+	.730	1.208	.610	1.260	.54
15	-	.016	.458	.136	.434	-1.48
16	-	.222	1.419	.356	1.471	- .51
17	+	.175	.583	.034	.524	1.40
18	+	- .111	1.018	- .186	1.238	.37
19	+	.032	1.332	- .152	1.297	.77
20	+	- .127	.684	.051	.705	-1.41
21	+	1.000	.916	.864	.955	.80
24	+	.397	1.622	.831	1.566	-1.50
25	+	- .175	1.129	.017	1.058	- .97
26	+	.397	1.144	.559	1.207	- .76
27	+	.349	1.065	.288	1.260	.29
28	+	.206	.883	.085	.857	.77
29	-	.508	1.615	.356	1.471	.54
30	-	.476	1.293	.288	1.218	.83
31	+	.794	.970	.475	1.072	1.72
32	+	- .698	2.894	- .492	3.131	- .38
33	+	- .540	1.882	- .203	1.730	-1.03
34	+	- .159	.987	- .170	1.302	.05
35	+	- .571	1.364	- .203	1.229	-1.57
36	+	- .111	1.695	- .102	1.900	- .03
37	+	- .143	1.281	- .119	1.439	- .10
38	+	- .635	2.058	- .390	2.158	- .64

TABLE 58. A COMPARISON OF THE EFFECTS OF THE PRERETIREMENT EDUCATION PROGRAM ON WHITE AND NEGRO SUBJECTS AS MEASURED BY MEAN SCORES

Reference Number and Name of Index	Z Values		
	Pre-R1	R-1	R-2
1 Satisfaction with Life	1.526	.094	.040
2 Morale	3.636[a]	1.064	.463
3 Adjustment to Retirement	.326	.548	1.065
4 Self-Concept of Age	.654	1.120	1.360
5 Self-Other Comparisons -- A		.737	.140
9 Attitude Toward Retirement	.960	.909	2.000[b]
10 Dissatisfaction with Retirement	1.060	.067	.438
11 Negative Aspects of Retirement		1.091	.167
12 Physical Health Index		.378	.448
13 Self-Appraisal of Health	.824	1.366	.148
14 Attitude Toward Health		1.267	1.409
16 Mental Health Index		1.359	.143
18 Disposition to Use Health Resources		.829	3.138[a]
20 Attitude Toward Income	.875	.822	.246
21 Money Management		1.591	1.811
24 Marital Relations		.983	1.000
25 Companionship in Marriage		2.632[a]	.462
27 Satisfaction with Relations		1.027	.943
28 Satisfaction with Friends		.357	.220
30 Social Deprivation -- B		.467	.071
31 Satisfaction with Home and Community		.146	.500
32 Total Activities	.425	.447	.390
36 Social Activity	.438	.423	.718

[a] Significant at the .01 level

[b] Significant at the .05 level

TABLE 59. A COMPARISON OF THE EFFECTS OF THE PRERETIREMENT EDUCATION PROGRAM ON SUBJECTS BORN IN AN ENGLISH SPEAKING COUNTRY AND SUBJECTS BORN IN A NON-ENGLISH SPEAKING COUNTRY AS MEASURED BY MEAN SCORES

Reference Number and Name of Index	Z Values		
	Pre-R1	R-1	R-2
1 Satisfaction with Life	.119	.594	.065
2 Morale	.515	1.673	1.018
3 Adjustment to Retirement	.083	.115	.211
4 Self-Concept of Age	1.055	.833	1.211
5 Self-Other Comparisons -- A		.226	.311
9 Attitude Toward Retirement	1.188	.857	.100
10 Dissatisfaction with Retirement	.525	.188	.212
11 Negative Aspects of Retirement		.318	.947
12 Physical Health Index		.143	.534
13 Self-Appraisal of Health	1.042	.828	.794
14 Attitude Toward Health		.237	1.045
16 Mental Health Index		2.882[a]	1.175
18 Disposition to Use Health Resources		.647	.575
20 Attitude Toward Income	.643	.600	.643
21 Money Management		.529	1.875
24 Marital Relations		1.706	.162
25 Companionship in Marriage		1.667	.207
27 Satisfaction with Relations		.352	.182
28 Satisfaction with Friends		.885	1.174
30 Social Deprivation -- B		.279	1.186
31 Satisfaction with Home and Community		.382	.167
32 Total Activities	.651	.449	.058
36 Social Activity	.288	1.147	.280

[a] Significant at the .01 level

TABLE 60. A COMPARISON OF THE EFFECTS OF THE PRERETIREMENT EDUCATION PROGRAM ON SUBJECTS WHO WERE MARRIED AND SUBJECTS WHO WERE NOT MARRIED AS MEASURED BY MEAN SCORES

Reference Number and Name of Index	Z Values		
	Pre-R1	R-1	R-2
1 Satisfaction with Life	.170	.286	1.300
2 Morale	.174	1.014	.225
3 Adjustment to Retirement	.660	2.000[a]	1.085
4 Self-Concept of Age	.650	.680	.231
5 Self-Other Comparisons -- A		1.435	1.792
9 Attitude Toward Retirement	1.050	1.250	.308
10 Dissatisfaction with Retirement	1.024	.467	.286
11 Negative Aspects of Retirement		.265	.313
12 Physical Health Index		.146	.366
13 Self-Appraisal of Health	.034	1.686	.675
14 Attitude Toward Health		.521	.660
16 Mental Health Index		.473	.592
18 Disposition to Use Health Resources ...		.158	.846
20 Attitude Toward Income	1.188	1.815	1.361
21 Money Management		.541	.120
24 Marital Relations			
25 Companionship in Marriage			
27 Satisfaction with Relations		.916	2.500[a]
28 Satisfaction with Friends		1.000	.359
30 Social Deprivation -- B		1.617	.123
31 Satisfaction with Home and Community ..		.041	.194
32 Total Activities	.171	.648	.267
36 Social Activity	.701	1.361	.182

[a] Significant at the .05 level

TABLE 61. A COMPARISON OF THE EFFECTS OF THE PRERETIREMENT EDUCATION PROGRAM ON SUBJECTS WHO COMPLETED EIGHT OR MORE GRADES AND SUBJECTS WHO COMPLETED FEWER THAN EIGHT GRADES IN SCHOOL AS MEASURED BY MEAN SCORES

Reference Number and Name of Index	Z Values		
	Pre-R1	R-1	R-2
1 Satisfaction with Life	.091	.417	.154
2 Morale	.434	.478	.404
3 Adjustment to Retirement	1.097	.955	.810
4 Self-Concept of Age	1.438	.824	1.056
5 Self-Other Comparisons -- A		.732	.872
9 Attitude Toward Retirement	.900	.364	.375
10 Dissatisfaction with Retirement	.471	.296	.920
11 Negative Aspects of Retirement		2.600[a]	.227
12 Physical Health Index		1.030	.783
13 Self-Appraisal of Health	1.122	.852	.103
14 Attitude Toward Health		1.714	1.150
16 Mental Health Index		1.020	1.245
18 Disposition to Use Health Resources		.242	1.543
20 Attitude Toward Income	.375	.952	.857
21 Money Management		1.310	.208
24 Marital Relations		.940	.459
25 Companionship in Marriage		.057	.516
27 Satisfaction with Relations		.600	.829
28 Satisfaction with Friends		.926	.208
30 Social Deprivation -- B		1.154	.325
31 Satisfaction with Home and Community		1.097	1.077
32 Total Activities	.067	2.476[b]	.369
36 Social Activity		2.159[b]	.149

[a] Significant at the .01 level

[b] Significant at the .05 level

TABLE 62. A COMPARISON OF THE EFFECTS OF THE PRERETIREMENT EDUCATION PROGRAM ON SUBJECTS WITH $6,000 OR MORE INCOME AND SUBJECTS WITH LESS THAN $6,000 INCOME AS MEASURED BY MEAN SCORES

Reference Number and Name of Index	Z Values		
	Pre-R1	R-1	R-2
1 Satisfaction with Life	.097	1.778	.458
2 Morale	.660	.659	.442
3 Adjustment to Retirement	1.188	.125	.857
4 Self-Concept of Age	.611	1.706	1.158
5 Self-Other Comparisons -- A		.681	2.250[a]
9 Attitude Toward Retirement	1.462	.400	.500
10 Dissatisfaction with Retirement	1.605	.892	1.759
11 Negative Aspects of Retirement		1.240	1.304
12 Physical Health Index		1.500	.842
13 Self-Appraisal of Health	1.261	.063	.581
14 Attitude Toward Health		1.302	1.630
16 Mental Health Index		1.117	1.607
18 Disposition to Use Health Resources		.032	.324
20 Attitude Toward Income	.033	.929	.939
21 Money Management		.121	.115
24 Marital Relations		.204	.897
25 Companionship in Marriage		.387	.944
27 Satisfaction with Relations		.702	.200
28 Satisfaction with Friends		.679	.444
30 Social Deprivation -- B		.477	.525
31 Satisfaction with Home and Community		.371	.407
32 Total Activities	.650	.891	.924
36 Social Activity	1.159	1.030	1.263

[a] Significant at the .05 level

TABLE 63. A COMPARISON OF THE EFFECTS OF THE PRERETIREMENT EDUCATION PROGRAM ON SUBJECTS WHO WERE ENGAGED IN SKILLED JOBS AND SUBJECTS WHO WERE ENGAGED IN UNSKILLED JOBS AS MEASURED BY MEAN SCORES

Reference Number and Name of Index	Z Values		
	Pre-R1	R-1	R-2
1 Satisfaction with Life	1.786	.880	.769
2 Morale	.833	.638	.478
3 Adjustment to Retirement	1.233	2.474	.273
4 Self-Concept of Age	1.563	.765	.765
5 Self-Other Comparisons -- A		.227	.632
9 Attitude Toward Retirement	.333	.000	1.100
10 Dissatisfaction with Retirement	2.629	.741	1.538
11 Negative Aspects of Retirement		.450	1.208
12 Physical Health Index		.269	.857
13 Self-Appraisal of Health	.026	.615	1.148
14 Attitude Toward Health		1.333	.098
16 Mental Health Index		.708	.962
18 Disposition to Use Health Resources		1.594	1.378
20 Attitude Toward Income	1.038	.286	1.087
21 Money Management		.212	.348
24 Marital Relations		1.314	.235
25 Companionship in Marriage		1.000	.257
27 Satisfaction with Relations			.147
28 Satisfaction with Friends		1.241	.792
30 Social Deprivation -- B		1.077	1.163
31 Satisfaction with Home and Community		.903	.077
32 Total Activities	.907	.441	1.301
36 Social Activity	.986	.153	.777

TABLE 64. A COMPARISON OF THE EFFECTS OF THE PRERETIREMENT EDUCATION PROGRAM ON WHITE AND NEGRO SUBJECTS AS MEASURED BY MEAN CHANGE SCORES

Reference Number and Name of Index	Z Values		
	Pre-R1 to R-1	Pre-R1 to R-2	R-1 to R-2
1 Satisfaction with Life	1.244	1.143	0.000
2 Morale	1.471	0.000	.458
3 Adjustment to Retirement	.049	.308	0.000
4 Self-Concept of Age	.098	.057	2.179[a]
5 Self-Other Comparisons -- A			.814
9 Attitude Toward Retirement	.322	1.761	.606
10 Dissatisfaction with Retirement	1.304	1.786	1.791
11 Negative Aspects of Retirement			1.600
12 Physical Health Index			.122
13 Self Appraisal of Health	2.124[a]	1.498	0.000
14 Attitude Toward Health			.191
16 Mental Health Index			1.213
18 Disposition to Use Health Resources			.623
20 Attitude Toward Income	.019	0.000	.534
21 Money Management			3.317[b]
24 Marital Relations			1.783
25 Companionship in Marriage			1.021
27 Satisfaction with Relatives			.330
28 Satisfaction with Friends			.183
30 Social Deprivation -- B (not married)			.431
31 Satisfaction with Home and Community			.188
32 Total Activities			1.067
36 Social Activities -- A			.086

[a] Significant at .05 level

[b] Significant at .001 level

TABLE 65. A COMPARISON OF THE EFFECTS OF THE PRERETIREMENT EDUCATION PROGRAM ON SUBJECTS BORN IN ENGLISH SPEAKING COUNTRIES AND SUBJECTS BORN IN NON-ENGLISH SPEAKING COUNTRIES AS MEASURED BY MEAN CHANGE SCORES

Reference Number and Name of Index	Z Values		
	Pre-R1 to R-1	Pre-R1 to R-2	R-1 to R-2
1 Satisfaction with Life	.258	.314	0.000
2 Morale	.741	0.000	.413
3 Adjustment to Retirement	.134	.236	0.000
4 Self-Concept of Age	.577	.342	.126
5 Self-Other Comparisons -- A			.175
9 Attitude Toward Retirement	1.987[a]	.996	1.538
10 Dissatisfaction with Retirement	3.432[b]	.479	.933
11 Negative Aspects of Retirement			1.063
12 Physical Health Index			2.847[c]
13 Self Appraisal of Health	.566	1.123	0.000
14 Attitude Toward Health			.739
16 Mental Health Index			1.844
18 Disposition to Use Health Resources ..			2.651[c]
20 Attitude Toward Income	.225	0.000	.346
21 Money Management			1.092
24 Marital Relations			.263
25 Companionship in Marriage			.438
27 Satisfaction with Relatives			.208
28 Satisfaction with Friends			1.372
30 Social Deprivation -- B (not married).			1.113
31 Satisfaction with Home and Community .			.195
32 Total Activities	.976	.572	.870
36 Social Activities -- A	1.381	.211	1.210

[a] Significant at the .05 level

[b] Significant at the .001 level

[c] Significant at the .01 level

TABLE 66. A COMPARISON OF THE EFFECTS OF THE PRERETIREMENT EDUCATION PROGRAM ON SUBJECTS WITH $6,000 AND MORE INCOME AND SUBJECTS WITH LESS THAN $6,000 INCOME AS MEASURED BY MEAN CHANGE SCORES

Reference Number and Name of Index	Z Values		
	Pre-R1 to R-1	Pre-R1 to R-2	R-1 to R-2
1 Satisfaction with Life	1.610	1.291	0.000
2 Morale	1.121	0.000	.510
3 Adjustment to Retirement	1.224	.625	0.000
4 Self-Concept of Age	.584	.663	.514
5 Self-Other Comparisons -- A			.191
9 Attitude Toward Retirement	1.742	.229	.930
10 Dissatisfaction with Retirement	.686	.958	.074
11 Negative Aspects of Retirement			.379
12 Physical Health Index			.841
13 Self Appraisal of Health	1.057	.875	0.000
14 Attitude Toward Health			.310
16 Mental Health Index			.101
18 Disposition to Use Health Resources			.172
20 Attitude Toward Income	.730	0.000	1.515
21 Money Management			.312
24 Marital Relations			.784
25 Companionship in Marriage			.504
27 Satisfaction with Relatives			.522
28 Satisfaction with Friends			.205
30 Social Deprivation -- B (not married)			.392
31 Satisfaction with Home and Community			.319
32 Total Activities	2.316[a]	.333	.304
36 Social Activities -- A	.170	.011	.459

[a] Significant at the .05 level

APPENDIX 2

INDEXES

1. *Satisfaction with Life Scale* (Cornell)
   All in all how much happiness would you say you find in life today? (Almost none, some but not very much, *a good deal*)[a]
   In general, how would you say you feel most of the time, in good spirits or in low spirits? (*Usually in good spirits*, usually in low spirits)
   * On the whole, how satisfied would you say you are with your way of life today? (*Very satisfied*, fairly satisfied, not very satisfied, not satisfied at all)

2. *Morale Scale* (Kutner)
   How often do you feel there's just no point to living? (Often, sometimes, *hardly ever*)
   Do you agree or disagree with the statement: things just keep getting worse and worse for me as I get older. (Agree, *disagree*)
   How much do you regret the chances you missed during your life to do a better job of living? (*Not at all*, somewhat, a good deal)
   All in all, how much unhappiness would you say you find in life today? (*Almost none*, some, but not very much, a good deal)
   * On the whole, how satisfied would you say you are with your way of life today? (*Very satisfied*, fairly satisfied, not very satisfied, not satisfied at all)
   How much do you plan ahead the things you will be doing next week or the week after - would you say you make *many plans*, *a few plans*, or almost none?
   As you get older, would you say things seem to be *better* or worse than you thought they would be?

3. *Adjustment to Retirement* (Cornell)
   How long (do you think) (did) it (will) take you to get used to not working? (Positive response: 1 to 3 months)
   After retirement how often (do you think there will be) (were there) times when you (won't) (didn't) know what to do to keep occupied? (Often, sometimes, *hardly ever*)

---

[a] Underlined response scored +1. In some instances either one of two underlined responses was scored. Responses can be positive or negative in character. It follows when the scored response is a negative one that a low score is in the desired direction.

* Item was in more than one scale or index.

4. Self-Concept of Age (Cornell)
How do you think of yourself as far as age goes - do you think of yourself as middle-aged, elderly, old or what? (Positive responses: middle-aged or "what?" reference such as "young")

5. Self-Other Comparisons Index A (Michigan)
* Do you think your health is better or worse than that of people your age? (Better, worse, same, don't know)
* Would you say you feel older or younger than most people your age? (Older, younger, same, don't know)
* Would you say your standard of living is better or worse than the standard of living of most of your friends and acquaintances. (Better, worse, same, don't know)
* Would you say, as compared to most families you know, you feel less close to your relatives, about the same, or closer than other families do?

6. Self-Other Comparison Index B (Michigan)
* Do you think your health is better or worse than that of people your age? (Better, worse, same, don't know)
* Would you say you feel older or younger than most people your age? (Older, younger, same, don't know)
* Would you say your standard of living is better or worse than the standard of living of most of your friends and acquaintances? (Better, worse, same, don't know)
* Would you say, as compared to most families you know, you feel less close to your relatives, about the same, or closer than other families do?
Would you say that, as compared to most families, you and your spouse feel less close to each other, about the same, or closer than other families do?
Would you say as compared to most families you know you feel less close to your children, about the same, or closer than other families do?

7. Attitude Toward Retired People Word Test
The subject was asked to say whether in terms of the older people he knew he agreed or disagreed with the following eighteen descriptive words: wise^{+}, aged^{-}, slow^{-}, cheerful^{+}, forgetful^{-}, healthy^{+}, neat^{+}, stubborn^{-}, enjoy themselves^{+}, active^{+}, productive^{+}, sad^{-}, good^{+}, alert^{+}, entertaining^{+}, handy to have around^{+}, progressive^{+}, lonely^{-}. Scoring was based on his saying "yes" to the words indicated with a + sign above and "no" to the words shown with a - sign.

8. Attitude Toward Retirement (Cornell)
Some people say that retirement is good for a person, some say it is bad. In general, what do you think? (Mostly good, mostly bad)

---

* Item was used in more than one scale or index.

9. Dissatisfaction with Retirement (Cornell)
How often will (do) you miss the feeling of doing a good job? (Often, sometimes, hardly ever or never)
How often will (do) you want to go back to work? (Often, sometimes, hardly ever or never)
How often will (do) you worry about not having a job to do? (Often, sometimes, hardly ever or never)
How often will (do) you miss being with the other people at work? (Often, sometimes, hardly ever or never)

10. Negative Aspects of Retirement (Cornell)
Do you think that stopping work has given you the feeling that your life is not very useful? (Yes, no, don't know)
Do you think that stopping work has made you less satisfied with your way of life today? (Yes, no, don't know)
Do you think that stopping work has made you think of yourself as older or younger? (Older, no difference, younger, don't know)

11. Preparation for Retirement (Michigan)
How well prepared are (were) you for retirement? (Very well, fairly well, not very well, not prepared at all)

12. Physical Health Index (Kutner) A weighted score was assigned for each of several aspects of health:

Confinement to bed because of illness during past year	Score
Less than one week	1
Occasionally	1
One to three weeks	2
Three weeks to one month	3
One month and over	4
Deprivations due to illness	
Illness keeps subject in home	1
Illness keeps subject from doing things	1
Illness keeps subject from seeing people	1
Illness keeps subject from working around the place	1
Illness keeps subject from all of the above	4

Number of illnesses
One = 1; two = 2; three = 3; four or more = 4

Serious illness, if reported (angina, ulcers, etc., a total of eleven serious illnesses were used as scorable items)
One = 1; two = 2; three = 3; four or more = 4

13. Health Self-Appraisal (Cornell)
Has your health changed during the past year? (No, yes, for better, yes, for worse)
* How would you rate your health at the present time? (Very poor, poor, fair, good, excellent)
Do you have any particular physical or health problems at present? (Yes, no)
Have you been seen by a doctor during the past year? (Yes, no)

14. Attitude Toward Health (Michigan)
* How do you rate your health at the present time? Would you say it was very poor poor, fair, good, or excellent?
Do you think your health is better or worse than that of people your age? (Better, worse, same, don't know)
Would you say you feel older or younger than most people your age? (Older, younger, same, don't know)
How would you compare your health now with what it has been during your life? Would you say it is now better, worse, or about the same?
* When people get older do you think they should be expected to be sick and have problems with their health? (Yes, no)

15. Worry About Health (Michigan)
How often do you worry about your health? Would you say often, sometimes, hardl ever, or never?

16. Mental Health Index (Michigan)
* How often do you worry about your health? Would you say often, sometimes, hardly ever, or never?
How often are you troubled by nervousness? Would you say often, sometimes, hardly ever, or never?
How often are you troubled by not being able to sleep? Would you say, often, sometimes, hardly ever or never?
Was there ever any period in your life in which you were so worried, nervous, or emotionally upset that you could not carry on your usual activities? (Yes, no)
How often do you get up tired and exhausted? Would you say often, sometimes, hardly ever or never?
* When people get older do you think they should expect to be sick and have problems with their health? (Yes, no)
Do you have periods of deep sadness that last a long time? (Yes, no)

17. Knowledge About Health Resources (Kutner)
Have you ever heard of any of the health services in the Detroit area? (Yes - must have named one or more services, no)

---

* Items used in more than one scale or index.

18. Disposition to Use Health Resources (Kutner)

If you were suddenly taken very sick where would you turn to for help? Would you turn to a private doctor, friend, relative, neighbor, druggist, clergyma clinic or hospital, none of these?

If this neighborhood had a medical center just for older people, would you go there for advice on your health problems? (Yes, no, don't know)

If there were a medical center especially for older people in this neighborhood would you go there for treatment or would you go to a center where they treated people of all ages? (Center for older people, center for all ages, don't know)

Do you think its a good idea to have a regular, thorough checkup by a doctor even if there is nothing wrong? (Yes, no, don't know)

19. Use of Health Resources (Michigan)

Where do you usually turn to for advice on health matters? Do you get advice from physician, spouse, friend, relative, neighbor, druggist, clergyman, clinic, hospital, none of these?

How often do you get a physical check up? (Once or twice a year was scored as +1)

Do you have a regular physician who takes care of you when you get sick? (Yes, no)

Do you have any health insurance or do you belong to a medical plan such as Blue Cross, Blue Shield, Community Health Association? (Yes, no)

At the present time are you doing anything specific to keep your health or to improve it? (Yes, no - scored +1 if he is using a health resource)

20. Attitude Toward Income (Cornell)

Do you consider your present income enough to meet your living expenses? (Yes, no, don't know)

How often do you worry about money matters? Would you say often, sometimes, hardly ever, never?

Is your standard of living better today, that is, are you living better today - or is it worse than during most of your lifetime? (Better, worse, same, don't know)

21. Money Management (Michigan)

How often do you worry about money matters? Would you say often, sometimes, hardly ever, never?

Do you figure it is a waste of time trying to do something about your financial situation? (Yes, no)

Do you budget your living expenses at the present time, that is, do you set aside a certain amount of money each week for such things as food, clothing, medicine and recreation and then try to stick to it? (Yes, no)

Have you figured out how much interest you are paying on the things you are buying on time? (Yes, no)

What kinds of changes do you plan on making in the way you spend your income? (Scored +1 for use one more planful actions)

How often do you and your wife disagree about money matters? Would you say often, sometimes, hardly ever, never?

22. Family Decision Making (Blood and Wolfe)

The ten decisions listed below were used as a basis for estimating the relative balance of power in family decision making between husbands and wives.

1. What car to buy?
2. How much money the family can afford to spend weekly on food?
3. What to have for meals?
4. What repairs to make on the home?
5. Where to go on a trip?
6. Whether or not to have children or relatives come for a visit?
7. Whether or not to go to a doctor when someone is sick?
8. What to do for children or relatives?
9. What to do when going out for the evening?
10. Whether or not the husband should find work to do?

Subject were given a choice of five responses, scored as follows for each of the decisions.

Response	Score
husband always	5
husband more than the wife	4
husband and wife exactly the same	3
wife more than the husband	2
wife always	1

23. Family Division of Labor (Blood and Wolfe)

Respondents were asked to give one of five responses to a list of ten tasks. The tasks and the five possible responses are listed below:

Tasks	Responses	Score
Who repairs things around the house?	Wife always	5
Who mows the lawn?	Wife more than husband	4
Who shovels the sidewalk?		
Who keeps track of the money and bills?	Wife and husband exactly the same	3
Who does the grocery shopping?		
Who gets breakfast?	Husband more than wife	2
Who straightens up the living room when company is coming?	Husband always	1
Who does the evening dishes?		

24. Marital Relations (Michigan)

Would you say that disagreements come up in your household more often, about the same, or less often than other families you know?

Would you say that, as compared to most families you know, you and your spouse feel less close to each other, about the same or closer than other families do?

* When you have had a bad day how often do you tell your spouse about your troubles? Would you say often, sometimes, hardly ever, never?

How do you feel about the understanding you get from your spouse of your problems and feeling? (Very satisfied, fairly satisfied, not very satisfied, not satisfied at all)

How do you feel about the love and affection you receive? (Very satisfied, fairly satisfied, not very satisfied, not satisfied at all)

* How do you feel about the companionship in doing things together? (Very satisfied fairly satisfied, not very satisfied, not satisfied at all)

Some people say that their spouse has helped them get used to retirement? Has your spouse helped you in this way? (Yes, no)

25. Marital Companionship (Blood and Wolfe)

* When you've had a bad day how often do you tell your spouse about your troubles? Would you say often, sometimes, hardly ever, never?

Thinking of marriage in general, which one of the five things on this card would you say is the most valuable part of marriage? ("Companionship with spouse" was scored +1)

* How do you feel about the companionship in doing things together? (Very satisfied fairly satisfied, not very satisfied, not satisfied at all)

About how many of your close friends are also close friends of your spouse? Would you say all of them, most of them, about half, some of them, or none?

26. Satisfaction with Children (Michigan)

Do you see your children as often as you would like to? (Yes, no)

What kinds of things do you do to help out your children? (Scored +1 for one or more kinds of help)

What kind of things do your children do to help you out? (Scored +1 for one or more kinds of help)

How well do you get along with your children? Would you say very well, fairly well, poorly, very poorly)

How often do you worry about your children? Would you say often, sometimes, hardly ever, never?

Would you say, as compared to most families you know, you feel less close to your children, about the same, or closer than other families do?

27. Satisfaction with Relatives (Michigan)

Do you see your relatives as often as you would like to? (Yes, no)

What kinds of things do you do to help out your relatives? (Scored +1 for one or more kinds of help)

What do your relatives do to help you out? (Scored +1 for one or more kinds of help)

How well do you get along with your relatives? Would you say very well, fairly well, poorly, very poorly?

Would you say, as compared to most families you know, you feel less close to your relatives, about the same, or closer than other families do?

---

* Items used in more than one index.

28. Satisfaction with Friends (Michigan)

Are your contacts with your friends more frequent than they were before you retired, less, or about the same as before?

Do you see your friends as often as you would like to? (Yes, no)

Have you made any new friends since you retired? (Yes, no)

29. Social Deprivations - A (Michigan)

* (a) How do you feel about the companionship in doing things together with your spouse? ("not very satisfied" or "not satisfied at all" scored +1)

* (b) Do you see your children as often as you like to? (Yes, no)

* (c) Would you say, as compared to most families you know, you feel less close t your children, about the same, or closer than other families do?

* (d) Do you see your relatives as often as you would like to? (Yes, no)

* (e) Would you say, as compared to most families you know, you feel less close t your relatives, about the same, or closer than other families do?

* (f) Do you see your friends as often as you would like to? (Yes, no)

(g) How often do you find yourself wishing you could meet more new friends - would you say often, sometimes, hardly ever, never?

(h) How often do you miss being with the other people at work - often, sometime hardly ever or never?

30. Social Deprivations - B (Michigan)

This is a five item index made up of items 29d, e, f, g, and h. It applies onl to single persons.

31. Satisfactions with Home and Community (Michigan)

What are the things you like about living in this home? (Scored +1 for one or more things

What would you say are the good things about living in this neighborhood? (Scored +1 for one or more good things)

Do you expect to stay in this area for most of your lifetime? (Yes, no)

32. Total Activities (Michigan)

Subjects were asked to look at a list of 19 activities of all kinds and state whether they participated in each one often, sometimes, hardly ever or never ("Often" was scored +1)

33. Sedentary Activities (Michigan)

Subjects were asked to look at the following list of eight sedentary activities and to state whether they participated in each one often, sometimes, hardly ever or never. ("Often" = +1)

Write letters
Read
Listen to radio
Watch television
Go to movies
Talk with friends
Play cards
Take auto rides

---

* Items used in more than one index.

34. **Physical Activity** (Michigan)

Activity	Score
Take walks	Scored "often" +1
Work around house	
Work in garden or yard	
Go hunting, fishing or other outdoor sports	

35. **Mass Media** (Michigan)

Activity	Score
Read	Scored "often" +1
Listen to radio	
Watch television	
Go to the movies	

36. **Social Activity** (Michigan)

Activity	Score
See children, grandchildren, relatives	Scored "often" +1
Write letters to family or friends	
Go visit friends or relatives	
Entertain relatives or friends in home	
Attend church	
Attend union, club, or lodge	
Talk with friends	
Play cards	
Go to tavern or bar	

37. **Social Activity with Family and Friends** (Michigan)

Activity	Score
See children, grandchildren, relatives	Scored "often" +1
Write letters to family or friends	
Go visit friends or relatives	
Entertain relatives or friends in home	
Talk with friends	

38. **Individual Activity** (Michigan

Activity	Score
Write letters	"often" was scored +1
Watch sport event	
Read	
Listen to radio	
Watch television	
Watch movies	
Take walks	
Work around house	
Work in garden	
Take auto rides	
Go hunting or fishing	

ERIC Clearinghouse
OCT 14 1968
on Adult Education